THE BUILDER

Incorporating

ARCHITECTURE & THE BRITISH ARCHITECT

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THIS WEEK'S NEWS

MEETINGS of the Joint Committee on Tendering Procedure have been arranged up to the end of November. *p.* 567

THE AIR FORCES MEMORIAL, to be opened by the Queen to-morrow, is illustrated. *p.* 570

THE DESIGNS placed first and second in the competition for a new head office building at Kampala for the Uganda Electricity Board together with the author's report, are illustrated. *p.* 578

THE FUTURE OF THE COMPETITION SYSTEM

THE competition system has become very firmly established within the architectural profession, and is in fact woven into the fabric of the Code of Professional Conduct. There is hardly a detail of the system open to criticism upon the basis of logical argument, and it is one of the main inducements to the young man without influence to persevere in the practice of his profession. The system thus has been for generations almost outside the field of argument and discussion, and it is probably this fact that has become its chief weakness. Institutions thrive on criticism, and may soon become moribund if perfection of form creates only self-satisfaction.

It is fact, however, that the open competition is now a much rarer event than in the days before the war, and that it is equally rare to find one of them producing an outstanding work of architecture. To some extent, of course, this must be attributed to an era of austerity which offers smaller opportunities for monumental architecture, but we cannot feel fully satisfied that this is the only reason for the eclipse. We can recall one or two pre-war competitions in which the design selected failed to reach the stage of bricks and mortar, mainly because the proposals were too far ahead of popular taste. We know of others since that time which have also faded out of the programme, ostensibly because of the national conditions, but, we feel, not without relief felt by the promoters that their town or city has been spared a building out of tune with the popular conception of great architecture. We do not suggest that the lay public are competent to assess the merits of competitive schemes, but we do feel that popular taste is an influence which cannot be entirely ignored, and we do not think we are imagining things in suggesting that the reluctance of a community to entrust itself to the taste of one man, or even of a small panel of men, is increasing.

We thus find ourselves in something of a dilemma, as to whether we are drifting into a criticism of the competition system, or a criticism of the modern assessor, for in either case we have no constructive suggestions for reform. We can hardly improve upon the justice of the system, though there are some who believe that open competitions would be more successful if divided into an open stage and a final stage limited to five or six of the competitors, each being paid a fee. We are inclined to think that this system, which has been tried before, generally fails in its intent in that the preliminary stage resolves itself into a process as exacting as any ordinary open competition, with the final stage, though paid, merely adding to the labour of the competitors and to the time absorbed in launching a big scheme.

Nor can we do more than appoint the leading men of the times to act as assessors, as we are in fact doing. Nor can these do more than select out of the material submitted to them the solution which they believe honestly to be the best before them. Is it not the competitor who is most at fault in present circumstances, in that he lacks the essential qualities which develop greatness in the individual? We cannot help feeling that we are here approaching the core of the problem, and we ought to be capable of recognising that we are passing through a period of mediocrity in all walks of life, with architecture not excepted. Our greatest politician is in his middle seventies; the great names of the art world have no comparable successors; good novelists so often fade out after their first spate of effort; no man has yet arisen to vie with a Lutyens. Competitors must possess the element of greatness in their make-up before they can win a resounding success, and the best of assessors, and the most watertight of conditions, can do no more than offer the opportunity—they cannot create that element.

We look therefore to the educational system to see whether there has been sound husbandry upon the soil of latent talent. The prospect there is neither encouraging nor reassuring. There has been, it is true, a great advance in the science of planning, and it is, of course, the good plan which has always won competitions. Very many more young men are capable of grasping the essentials of a planning problem than was the case 40 years ago, and they are thus better equipped to explore the conditions of a competition. But fewer have been sufficiently developed to translate the good plan into fine human architecture from which the million passers-by derive as much uplift and stimulus as do the thousand users of the accomodation provided. The problem of the assessor is thus rendered still more difficult. He has a score of good workmanlike diagrams by which the practical needs of the problem he has set are fully satisfied, but few, if any, of them touched with the three-dimensional genius which ends in fine architecture. Can his choice in the majority of cases be other than uninspiring?

We are left thirsting for some of the majestic dignity which stamped some of the great buildings won in competition in the past. No designer has yet found an adequate substitute for the Classic idiom which dressed so many of those outstanding successes, and while we would be the last to want to see an array of Corinthian porticos as the prerequisite for success, we equally strongly believe that the study of tradition has been too lightly passed over in our educational system, and that until the young student has been once more inspired

by the ancient standards, he will remain silent and tongue-tied when he faces his virgin sheet of paper in an effort to express the scale and dignity of the building he has conceived upon the lines of its foundations.

The competition system is sound as a bell, but it can do the job it once did only if it commands the faith and confidence of the public. It can win that through the efforts of inspired competitors, who will be there only if they have been given a right lead by their teachers. At all turns we thus come back to this question of education, and to that sense of disquiet that disturbs most thinking men within the profession. There is something amiss with the very foundations of architectural education to-day, and the sooner that fact is boldly recognised the better it will be for the whole of society.

TENDERING PROCEDURE

THE removal from the agenda of the Joint Committee on Tendering Procedure of the question of the London Builders' Conference cleared the decks for a much-needed review of tendering procedure. A bulletin issued at the end of last week indicates that the Committee has met ten times since its appointment in March and that further meetings have been arranged up to the end of November. By that time nearly a year will have elapsed since Mr. Howard Robertson was first invited by Sir David Eccles to conduct an inquiry into tendering procedure in general, with special reference to the Conference method, and though there were delays for all of which neither the Committee nor its convener can fairly be held responsible, the public, as represented by the building owner, will shortly be asking for the Committee's recommendations. As things are going, the report cannot be published until the New Year, more than twelve months from the time when, "as a matter of urgency," the Minister of Works' invitation was accepted.

This seems too long a time; if the Committee is doing no more than studying the Simon Report on the Placing and Management of Building Contracts, then it is difficult to see the reason for the delay. If it is ranging over other matters such as the cost of building then, however important these matters may be, it would seem to be exceeding its terms of reference. We trust that means may be found for speeding up the Committee's deliberations and the issue of the report, and this we ask not only that its recommendations may see the light of day but for a further reason which we consider important. Though the Joint Committee got off to a false start, its appointment nevertheless marked a significant departure in the method of finding solutions of the industry's problems by the industry itself. Problems other than tendering procedure now await urgent consideration—among them the place of the subcontractor and specialist in the building team; the cost of building; and the question of education for the higher grades of building management. We believe we shall not be alone in wanting to see a joint committee such as Mr. Robertson has assembled kept in being so that questions of moment such as we have mentioned could be remitted to them for consideration (possibly by subcommittees) and report. Such procedure could help by keeping building practice constantly under review and, in so doing, would go far towards unifying the varying sides of the industry.

Sir Harold Webbe C.B.E. M.P. Cities of London & Westminster
The Rt. Hon. Sir David Eccles K.C.V.O., M.P. Minister of Works
The Rt. Hon. the Lord Mayor Sir Rupert De la Bère K.C.V.O., M.P.
SHERIFF: Alderman & Sheriff Edmund V. STOCKDALE
L·M·B·A
VICE-PRESIDENTS
R.S. WILLIAMS M.I.O.B
K.C.F. FOSTER M.I.O.B
L.J. HOLLOWAY F.I.O.B
LONDON MASTER BUILDERS ASSOCIATION
The Right Worshipful The MAYOR City of Westminster Alderman Charles P. RUSSELL C.V.O., J.P.
Gerald A. HILL M.I.O.B PRESIDENT L·M·B·A
Sir George Burt Pres. Federation of Civil Engineering Contractors Past Pres. L·M·B·A.
Sir Arthur Middleton S.P.F.A., J.P. Chairman L·C·C.
J·H. MILLS President National Federation of Building Trades Operatives
W. HORSFALL President National Federation of Building Trades Employers

SOME PERSONALITIES AT THE LMBA LUNCHEON TO THE LORD MAYOR, as seen by HARRY RILEY.

A report of this Luncheon, held at the Savoy Hotel on Monday, is given on page 589.

NOTES & NEWS

LORD MAYOR AND LMBA

THE now traditional luncheon given by the London Master Builders' Association to the Lord Mayor, held on Monday at the Savoy, was a great success. Mr. Gerald Hill welcomed Sir Rupert De la Bère in genial manner, and assured him of the Association's support in his campaign for rebuilding the City. The Lord Mayor, in reply, delivered a broadside against those who were holding up the redevelopment—although whether he was referring to the Royal Fine Art Commission or the Bankers (both of which bodies were meeting on October 14) he would not say. Sir David Eccles also spoke and gave some cautious, but on the whole encouraging, news about materials supply. His implied criticism of architects as being responsible for the delay in preparation of plans for the rebuilding of the City struck some at least of his listeners as being unjust. The Minister himself, later in his remarks, referred to the need for ample time for preparation, and there is no doubt that the offer early this year of £12 million worth of licences caught the City unawares. In these circumstances, and remembering the cost in time and money of preparing schemes, Sir David really must acquit the architects of inertia; they are only too ready to design, as the builders are to build.

DESIGN IN THE CITY

THERE is an important point to which no reference was made by any of the speakers on Monday—the cleavage of opinion which exists in the matters of design between the City and planners and designers. While there have been a few buildings in recent years which show an improvement in design, it remains broadly true that the standard of commercial architecture in the City is deplorably dull. Coupled columns and massive masonry remain beloved by commercial interests; these, it would seem, appear to their mind to be synonomous with stability and integrity. But ideas change, and these massive structures often built up to the limit of the site and with enclosed internal courtyards, are not suitable for this day and age. Continued insistence on these features will not only deprive the City of architectural interest but will increasingly bring schemes into conflict with such arbiters of taste and amenity as the Royal Fine Art Commission which, rightly, is in favour of opening up the congested City by buildings which cover less of the site area and make good the loss by increased height. The City developers would do better to trust their architectural advisers and adopt the lighter, more graceful structures which this form of development necessitates.

TENDERING PROCEDURE

THE Joint Committee on Tendering Procedure have resumed their inquiry after the summer recess. They have held ten meetings since their appointment in March, and further meetings have been arranged up to the end of November.

INTERNATIONAL OCCASION

THE Prestressed Concrete Development Group were the hosts at a dinner at the Savoy Hotel, WC2, on October 8, for 300 delegates and their wives attending the first international congress of the International Federation of Prestressing (FIP) which was held in London last week.

MR. D. H. NEW, chairman of the Prestressed Concrete Development Group, who presided, proposed the toast of the guests, who had come from a score or more countries in different parts of the world. He said how pleasant it was to be able to reciprocate some of the cordial hospitality which had been extended to British engineers in their visits overseas. He also announced that FIP's next international congress would be held in Holland in two years' time, at the invitation of the Dutch delegation.

After Mr. New had spoken, representatives of all the foreign delegations expressed, in turn, their thanks for the hospitality they had received in this country, and it was clear from their remarks that they regarded the Congress as a great success. It was interesting to hear from an American that the USA could be behind Europe in anything, but MR. CURZON DOBELL, who represented that country, admitted that the USA had been backward in acquiring the technique of prestressing. This, he said, was something that was now being put right.

There were a number of other good and witty speeches in the course of the evening, but greatest applause went to Professor G. Magnel, who led the Belgian delegation, and it was clear that the personal warmth and affection felt for him by concrete specialists in many countries equalled the esteem in which he is held for his pioneer work in the field of prestressing.

COMING EVENTS

MONDAY, OCTOBER 19

RIBA LIBRARY GROUP.—Identification of drawings. 66, Portland-place, W1. 6 p.m.

WILTS AND DORSET SOCIETY OF ARCHITECTS.—Architectural Exhibition. Shire Hall, Dorchester. 11 a.m.

TUESDAY, OCTOBER 20

HOUSING CENTRE.—"Rehousing in the Central Areas of Smaller Towns," by Mr. Max Lock, FRIBA, MTPI. 13, Suffolk-street, SW1. 6 p.m.

WEDNESDAY, OCTOBER 21

ARCHITECTURAL ASSOCIATION (STUDENTS' COMMITTEE).—Exhibition and discussion on symbolism and architecture. 34, Bedford-square, WC1. 7 p.m.

RICS.—"Building for Money,' by Mr. Oliver S. Chesterton, MC, FRICS. 12, Great George-street, SW1. 6 p.m.

LMBA (SOUTH-WESTERN AREA).—Luncheon and apprentices prize-giving. Zeeta's Restaurant, Kingston Bridge, Kingston-on-Thames. 1 p.m.

THURSDAY, OCTOBER 22

STUDENTS' PLANNING GROUP.—"Some Social Aspects of New Town Development," by Mr. G. Brooke Taylor. 28, King-street, WC2. 6.30 p.m.

RIBA.—Travelling exhibition "Home and Surroundings." Medway School of Art, Rochester. Continuing until October 27.

COUNCIL FOR THE PRESERVATION OF RURAL ENGLAND.—14th National Conference. Winter Garden, Great Malvern. 8 p.m. Continuing until October 25.

FRIDAY, OCTOBER 23

LONDON MASTER BUILDERS ASSOCIATION.—Conference on Building Education. 47, Bedford-square, WC1. 2 p.m.

INSTITUTE OF QUANTITY SURVEYORS.—Midland branch meeting to discuss "Controversial Matters in Quantity Surveying." College of Technology, Birmingham. 7.30 p.m.

ARCHITECTS' VISIT TO USSR

A REPORT on the visit by British Architects to the USSR will be given by members of the delegation at a meeting to be held at 7.30 p.m. on Wednesday, October 21, at the SCR headquarters, 14, Kensington-square, W. Admission, 1s. 6d. (SCR members and students, 1s.)

BUILDING EDUCATION

THE LMBA announce that the annual conference on Building Education is to take place on Friday, October 23, when it is again hoped that a large number of principals and heads of building departments of colleges and schools in the London region, representatives of the Ministry of Education, the Regional Advisory Council, the NFBTE, and members of the LMBA's administrative and apprenticeship committees will be present.

The conference will begin at 2 p.m., at the LMBA, 47, Bedford-square, WC1, and as usual the principal feature will be the informal discussions initiated by those present.

CPRE CONFERENCE

THE FOURTEENTH national conference for the preservation of the countryside which has been organised by the Council for the Preservation of Rural England in conjunction with the Council for the Preservation of Rural Wales, will take place at Malvern from October 22 to 25.

The importance of trees will be the subject of one of the papers to be read. It will be given by Lord Merthyr, MA, JP. Problems arising from mineral working in the countryside will be dealt with by Major A. H. S. Waters, VC, CBE, DSO, while Mr. Robert Aickman will speak on the future of inland waterways.

BUILDING FOR MONEY

MR. OLIVER S. CHESTERTON, MC FRICS, is to give an address on "Building for Money" at a meeting of the Royal Institution of Chartered Surveyors on October 21.

RECORDING BUILDINGS

THE TWELFTH ANNUAL REPORT of the National Buildings Record, issued from, 37, Onslow-gardens, SW7, gives a list of historic houses that have been demolished in the past year which, by its length, draws attention to the large number of such houses that are now disappearing year by year and emphasises the importance of the work of NBR in making a permanent record of what cannot be preserved.

The report, which includes four pages of photographs of great houses recently destroyed or demolished, goes on to point out that it is quite evident that NBR cannot keep up with the demolitions all over the country unless they have more resources, even though the cost of recording is a mere fraction of that for preservation. But, the report says, "there seems to be no means of convincing the authorities that the matter is of such urgency that immediate action is absolutely necessary . . . Our chief difficulty lies in the fact that in spite of our expanding functions and rapidly increas-

ing collections the grant we receive remains fixed."

The report contains an appendix in which are listed some of the chief collections of negatives, prints and drawings.

VANDALS ON PRIMROSE HILL

ONE of the more inexplicable phenomena of the present age is the extent of vandalism directed towards public property. A recent example is the wanton attack made on the charming viewfinder on Primrose Hill (recently presented by Mr. Arthur Kenyon, CBE, FRIBA, and accepted on behalf of the people of London by the Minister of Works), in the course of which has been wrenched off the stone top with the metal plaque indicating the major buildings to be seen in panorama below. The Ministry of Works have taken the only possible step of fencing in the hill to enable it to be closed at night. This is bound to draw protests, but it is difficult to see what other course is open to them.

ARCHITECTS AT GOLF

THE AUTUMN MEETING of the RIBA Golfing Society was held at Denham Golf Club on September 17. For the first time since the war, the Society were really inconvenienced with the weather and driven from the course in the afternoon by a downpour of rain. However, the morning round was completed and the Selby Cup was won by Mr. L. H. Hammond with a score of 80—16—64. The runner-up was Mr. R. G. Scott with a score of 76—3—73. Both were very fine performances considering the weather conditions.

At the annual general meeting in the evening, the honorary secretary, Mr. Eric H. Firmin, was elected captain of the Society for the next season, and Mr. Joseph Emberton was elected to the committee.

PROFESSIONAL ANNOUNCEMENTS

It is announced by MESSRS. EDWARD ARMSTRONG AND FREDERICK MACMANUS, chartered architects, that MR. EDWARD ARMSTRONG has retired from practice owing to ill health. The practice will be continued in the same name by his partner, MR. FREDERICK MACMANUS, FRIBA, from the following new address: 28, Gloucester-place, Portman-square, London, W1 (tel.: Welbeck 2273-4).

MR. H. GEOFFREY ROUND, ARIBA, announces that he has now commenced in private practice at 53, Oxford-street, Weston-super-Mare (Tel. No. 617), having resigned from the post with the Weston-super-Mare Corporation as Chief Housing Architect under the Borough Engineer. He will be pleased to receive trade catalogues and literature of a technical nature.

MESSRS. C. K. CAPON, AADipl, ARIBA, P. L. COCKE, AADipl, ARIBA, M. H. COOKE-YARBOROUGH, AADipl, ARIBA, A. W. COX, AADipl, ARIBA, L. M. DE SYLLAS, AADipl, ARIBA, J. M. GRICE, AADipl, ARIBA, and M. A. R. POWERS, AADipl (USA), previously practising as Architects' Co-operative Partnership at 34, Gordon-square, London, WC1, have moved their office to 44, Charlotte-street, London, W1 (tel.: Langham 5791) and are now practising under the style of ARCHITECTS' CO-PARTNERSHIP.

The telephone number of MR. WILFRED MOORE, ARICS, is Leeds 25324, and not as printed last week.

FROM "THE BUILDER" OF 1853

Saturday, October 15, 1853

RAILWAY MATTERS.—The London and North-Western Company have announced that they will give a free first-class pass for a series of years to persons who will build houses worth not less than 50 *l.* per ann. at Harrow, Pinner, Bushey, Watford, King's Langley, Boxmoor, Berkhampstead, or Tring.

CORRESPONDENCE

WATER CHARGES

To the Editor of *The Builder*

SIR,—I have read with much interest the leading article on water charges in your issue of October 9. It is quite clear from the evidence you give that the rates charged by some authorities are nothing less than scandalous, and it is to be hoped that the Minister of Housing and Local Government will intervene.

It is interesting to observe that this matter has already received official attention in Scotland, a sub-committee of the Scottish Water Advisory Committee having reported on the subject earlier this year.* The sub-committee reported "general agreement that, where practicable, metering is the most equitable way of charging for water for building and civil engineering works." The sub-committee considered, however, that there were "virtually insurmountable" difficulties in the way of adopting metering generally. They state (para. 4 of the circular):

"Among the chief disadvantages of metering these supplies is the fact that meters and their fitting and care are expensive; as supplies for building sites are, of course, only temporary, the expense of fitting and maintaining the meter will often be out of all proportion to the charge for water. It is also extremely difficult to protect meters, particularly on large housing sites, from damage by the heavy vehicles and plant used on this work. On large sites too, contractors are often permitted or are able to take supplies at a number of points, and as housing sites develop, water may be being drawn off for occupied houses. In these circumstances it is not easy to ensure that the supplies to the contractor are metered without the house supplies being included in the consumption. It would clearly be impracticable in these circumstances, for example, to arrange for the constant shifting of the meter to take account of the water being consumed on the works, and to omit supplies going to occupied houses."

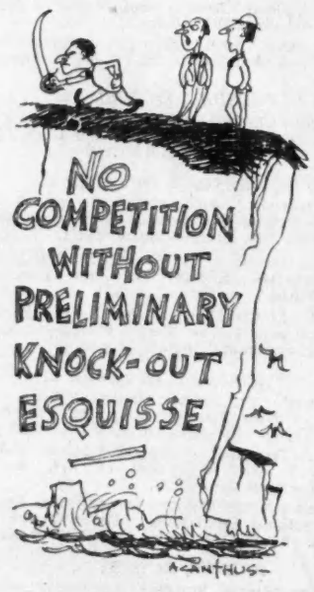
The sub-committee, therefore, contented itself with the recommendation that metering should be adopted where practicable, but that it should be left to the local water authority to judge whether the use of a meter would be practicable.

The Scottish report does not, however, seem wholly convincing. I believe that meters have been used successfully on sites in England, so that it is difficult to understand why they cannot be used with equal success in Scotland. Moreover, the discretion whether or not to use a meter ought to be given to the contractor, not to the authority. It is the contractor who pays for the installation and is liable for damage to the meter, and if he is prepared to incur these costs he should be allowed a meter. There is another reason why the water authority should not be allowed to decide: as the Scottish report very clearly shows there is a quite appalling waste of water where meters are not used, and it does not seem too much to suggest that some authorities reap a handsome financial return out of this waste of a valuable national asset.

A. E. TELLING.

5, Bromwich-avenue, N6.

* DHS Circular 9/1953.



"I persuaded him to spare the assessor but he's been taking it out of the white cliffs."

NEW STREETS ACT

To the Editor of *The Builder*

SIR,—It is clear from your review upon the recent Ministry circular No. 56/53 (*The Builder*, September 25) that the practical difficulties created by this legislation are now recognised. In most cases a builder has not free resources to meet the required deposits.

Unfortunately it is not yet widely appreciated that there are a number of reputable finance companies which can enable a builder to provide the capital required for this purpose under the 1951 Act out of the profit earned from the completion of the building. The costs involved are small, and many authorities have already approved the application of this system.

C. P. CHOULARTON.

"Century House," 11, St. Peter's-square, Manchester, 2.

OBITUARY

H. W. ALLARDYCE, FRIBA

WE REGRET to record the death, which occurred on October 1, of Mr. Henry William Allardyce, FRIBA, of 1, Breamore Court, Goodmayes-lane, Ilford. He was a partner in the firm of Messrs. C. J. Dawson, Son and Allardyce.

SYDNEY JUPP, FRIBA

THE DEATH is also reported, after a brief illness, of Mr. Sydney Jupp, FRIBA, of 25, Sackville-street, W1, and of Purley, and recently of Yelverton, Devon. He was 80.

ALFRED KNEWSTUBB, LRIBA

THE DEATH has occurred of Mr. Alfred Knewstubb, LRIBA, ARICS, who had practised as an architect at Penrith, Cumberland, for 40 years. He was 73. For many years he was architect to North Westmorland Rural Council and also to Westmorland Education Committee.

ARCHITECTURAL PHOTOGRAPHY

Exhibition at the RIBA

THIS exhibition (which remains open at the RIBA until October 29, Mondays—Fridays 10–7, Saturdays 10–5) is not only interesting and often beautiful, but also useful in providing a survey of specialists in a very specialised field. It also provokes thought. One is that, in view of the urgent need to show the man in the street what the architect is up to and what the result is going to look like, it seems a pity not to have included some example of the "photo-montage" technique now used again from time to time to superimpose photographs of models on the landscape which is to be the context. Perhaps none were submitted.

The following are personal preferences, mostly typical of several of their kind : for brevity, some titles are shortened. D. T. V. Drumm's "Athenaeum" (13) seems to me an admirable example of the architectural equivalent of society portraiture. The Skin You Love to Retouch surely has its analogy in the Five O'clock Shadow cast on the creamy elegance of paint-jammed stucco and, even in our climate, an ageing face can be made to look quite its best without either cruel revelation or equally cruel evasion, as here.

J. C. Eastwick-Field's "Steps from the Arena, Arles" (15), is one of the few compositions introducing human figures, and suggests a "still" from one of the more enlightened documentaries. C. R. Harper's three Gothics (22–24), show a sensitive appreciation of the textural and other qualities of the style, the fan-vaulting of the "Monks Lavatorium, Gloucester," particularly, having something of the sinister, fretted quality of "Gothick" romantic.

T. J. Jones' "Builder's Office, Hampstead" (31), is almost "painted," reminding one of a characteristic of the late C. H. James' pencil drawings in being somehow full of colour. J. C. Stillman's "St. Anne's, Soho" (54), a view of the cupola through a now demolished arch, is intensely dramatic and well exploits the tar-black and alum-white quality so congenial to the medium.

In colour, Gerhard Graeb's moving studies (64, 5, 6) from Crete and Paestum are hardly possible to mention without becoming lyrical. Here is colour photography at its best

In the contemporary section, it is difficult not to feel a slight initial disappointment until one remembers that architects to-day are not primarily concerned with "setting the scene." Until some 4-D method of presenting the subject can be found, in which plan and programme as well as elevation (perhaps with client "inset") can be shown simultaneously, modern buildings must compete with others frankly more picturesque, in all weathers.

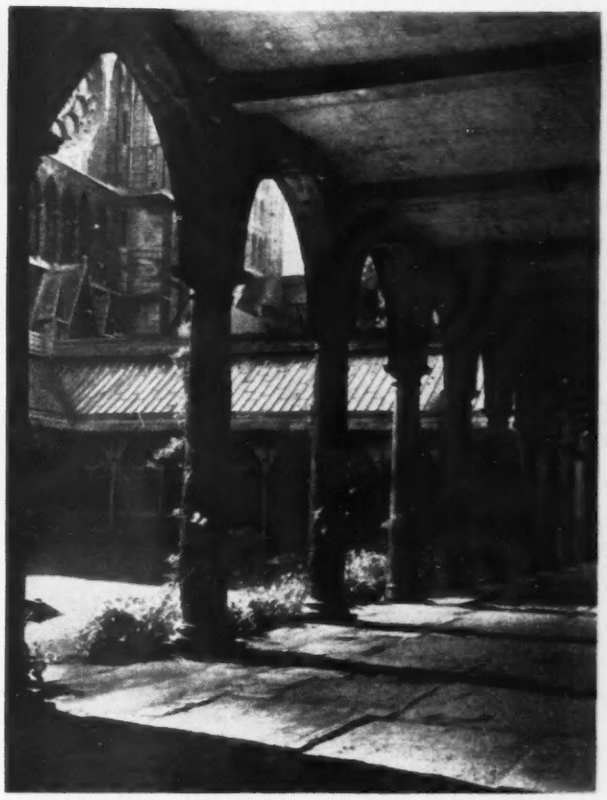
Miss M. F. Harker's "Reconstructed Interior, Tring" (83), really does look livable-in, if not actually lived-in, which is refreshingly rare. Her Royal Festival Hall, on the other hand, prompts some of the doubts felt about the interior itself, and is therefore presumably fair objective comment.

S. W. Newbery's "Headley Court" (108-9) does full justice to a design relying to an unusual degree on surface modelling. H. Tayler and D. J. Green's "Alterations to Imhof's Shop" (129) seems a fair interpretation of the architect's intentions in attracting the window-shopper. An interesting contrast is to be found between Norman Westwood's "Flats at Zurich" (150) and John McCann's "The Lawn, Harlow" (95), the overhanging eaves of the former giving it a disproportionately "foreign" and rather dated look, though obviously necessary in a snowy country.

Of the transparencies, those in the historical section include a personal "covet" in the tiny (35-mm.) "Dome of the Capella Palatina" (156) by B. H. Cox, suggesting in its jewel-like richness the bauble of some Renaissance noble.

But it is in the contemporary section that colour transparencies come into their own. It is not easy to decide why the medium seems so perfectly complementary to the subject, though clearly Howard Robertson is right in pointing out (in the foreword to the catalogue) its value at a time when colour must increasingly be relied upon in the absence of modelling. The most striking example is perhaps "House, Connaught Mews" (181) by J. R. Pantlin.

BASIL MARRIOTT.

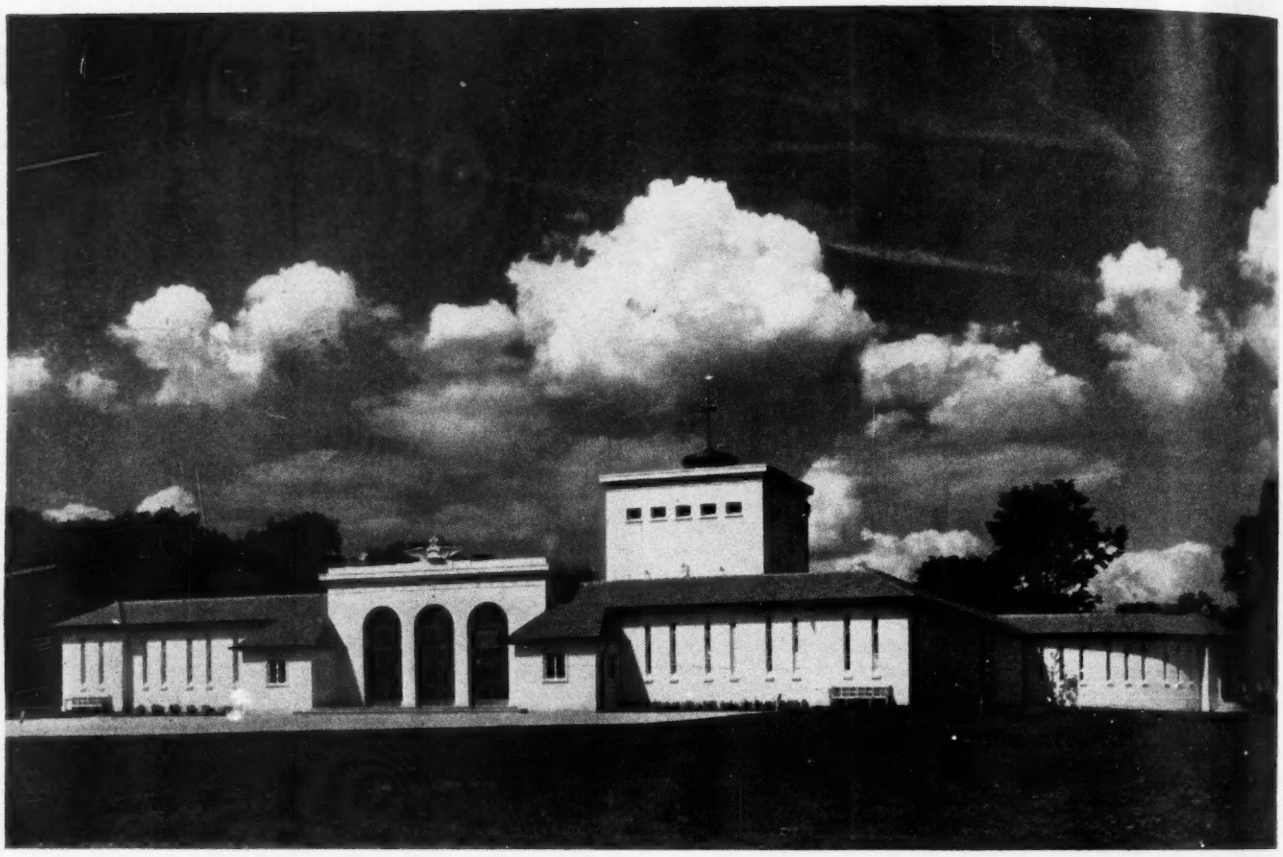


Photograph : H. C. Stacy.

Wren's Cloister, Lincoln Cathedral.

Photograph : E. Heimann.

Casa de los Picos, Segovia.



Air Forces Memorial, Cooper's Hill, near Runnymede, Surrey

Architect
EDWARD MAUFE, RA, Hon.LLD, FRIBA

Consulting Engineers
BYLANDER & WADDELL

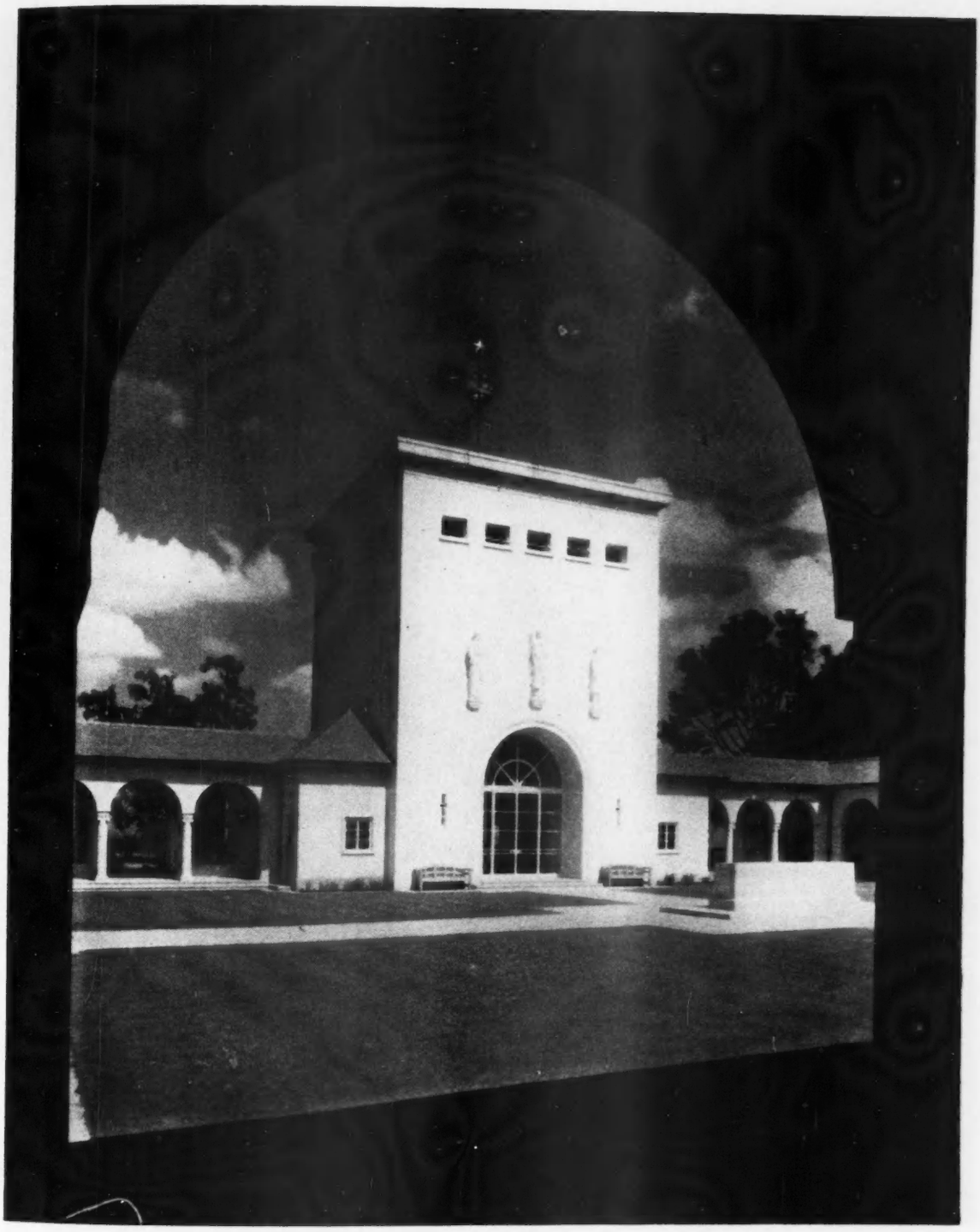
Quantity Surveyor
FREDERIC SAUNDERS

Builders
HOLLOWAY BROS. (LONDON), LTD.

On Cooper's Hill eternal wreaths shall grow
While lasts the mountain, or while Thames shall flow.
POPE.

THIS Memorial to all those airmen who lost their lives during operations from bases in the United Kingdom and have no known grave is to be opened by Her Majesty the Queen to-morrow. It would be difficult to imagine a site combining greater scenic beauty and more memorable historical associations than that on which it has been built. The gift of Sir Eugen and Lady Millington Drake, the site is on the crown of a spur of Cooper's Hill immediately overlooking the meadow of Runnymede. It has deeply stirred the imagination of the peoples of Britain and of the Commonwealth that the memorial to those airmen who so lately helped to save our freedom should be so closely associated with the spot where that much earlier freedom is commemorated.

The Memorial, constructed by the Imperial War Graves Commission, is approached by way of a leafy lane from the village of Englefield Green. At first sight it appears to be set in what might be an ordinary tree-girt meadow of the countryside. Only when the visitor has reached the far side of the Memorial does he realise that it is in fact perched on the very edge of a precipitous hill, commanding magnificent views over the wooded landscape of seven counties, with Windsor Castle seen to the west and London

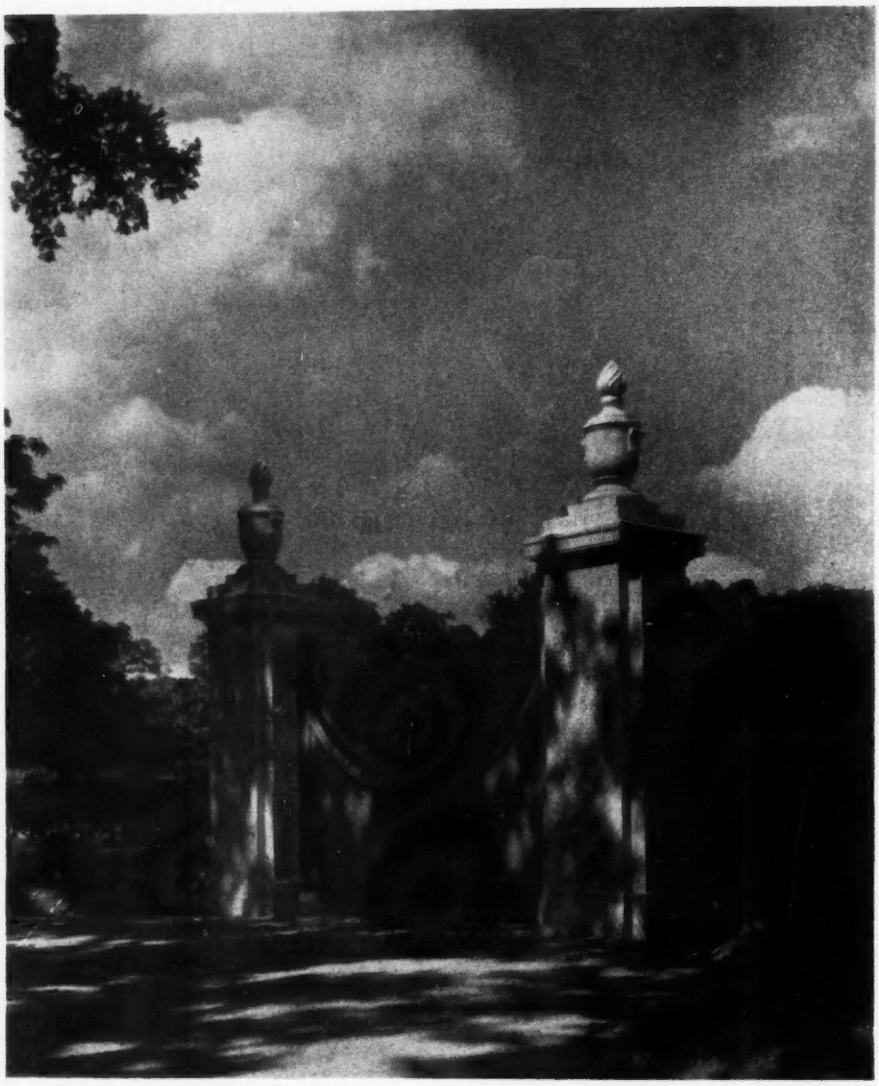


View from South Cloister across the Garth towards the Shrine.

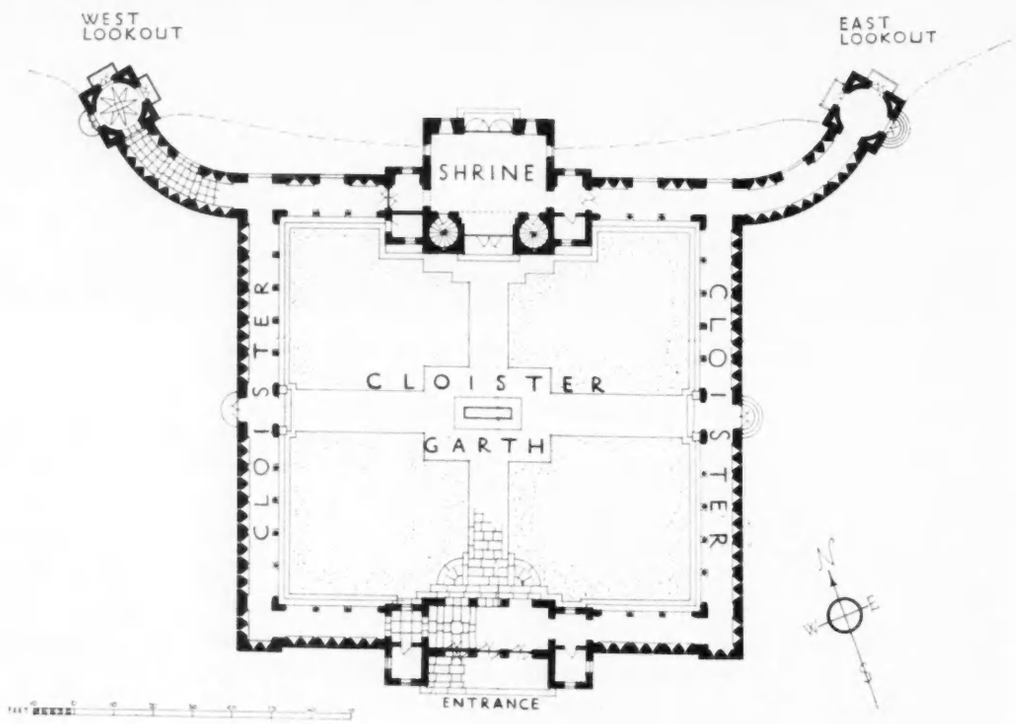
Airport to the east. Densely wooded slopes lead down to the green level meadow of Runnymede, touching the winding ribbon of the Thames. Pope's prophecy is seen to be literally fulfilled.

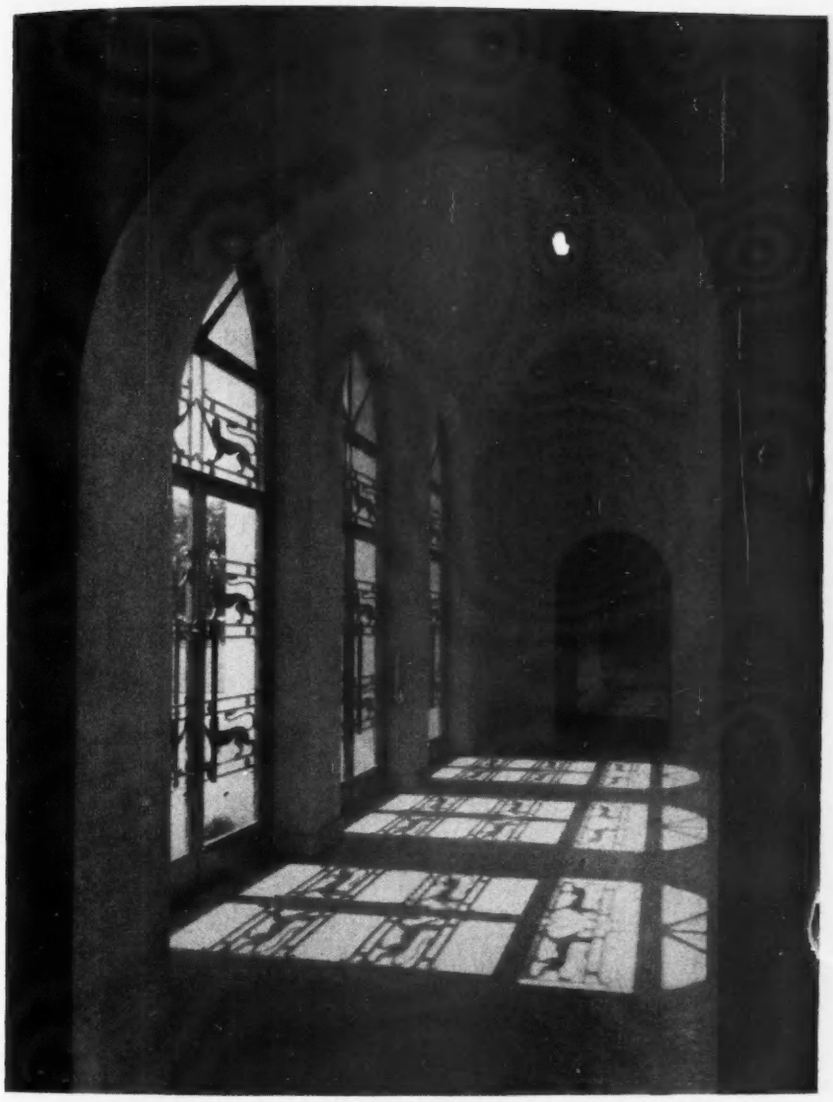
The entrance to the Memorial is through oak panelled gates hung between Portland stone piers crowned with classical urns and bearing on their faces the words "Air Forces Memorial" in Roman lettering. Evidence of the careful thought underlying the design of the whole memorial is seen in the concave shape of the top of the gates, which affords a clear view of the building from outside. The Memorial is led up to by a gravelled roadway on the main axis between lawns, but it is understood that the approach is ultimately to be by three avenues of silver birches.

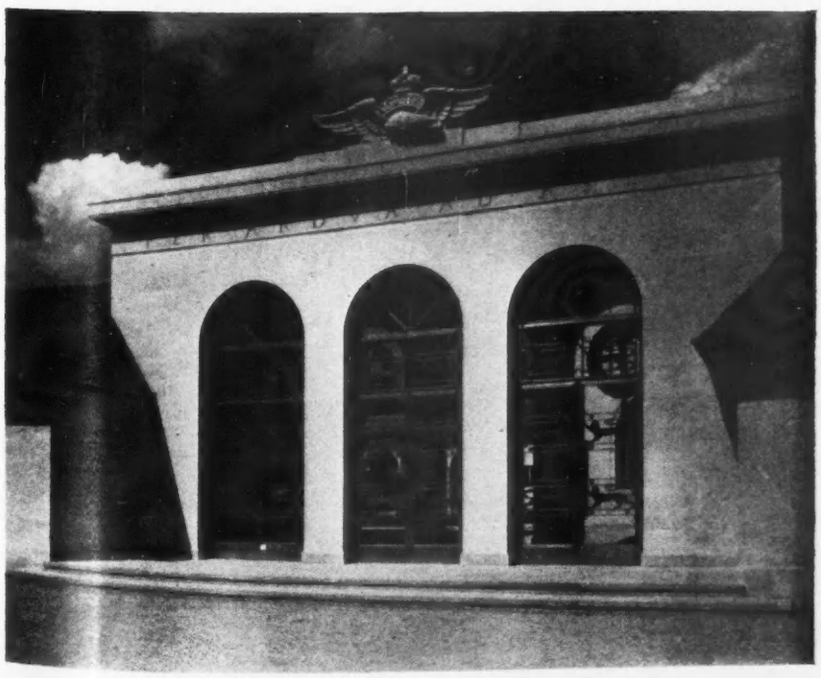
The cloister is a traditional and well-loved architectural form and Mr. Maufe has clearly adopted it not only for this reason but because, being necessarily made up of many small units, it is perfectly adapted to the recording of the names of the men who met their impenetrable fate banded together in small units. The design also embodies a Shrine on the far side of the main axis, and in the centre



Approach Entrance Gates.







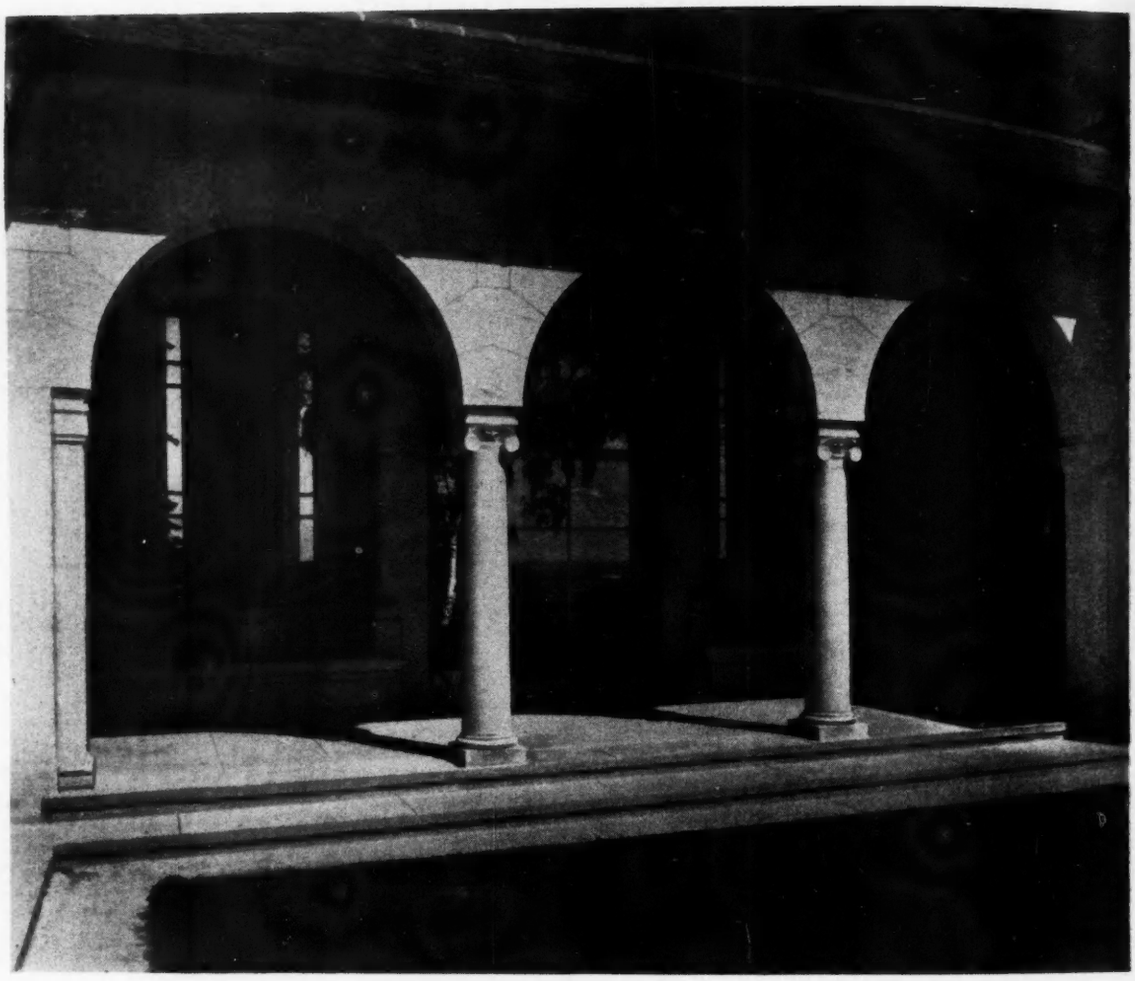
Entrance vestibule and (below) the entrance. The Eagle was carved by Esmond Burton.

of the cloister garth, approached on both axes by paved walks, is the Stone of Remembrance bearing the inscription "Their Name Liveth for Evermore." On the far side the arcades are continued outwards in the form of gently curved wings terminating in small "look-outs" on the very edge of the cliff.

The Memorial is of Portland stone with roofs of Westmorland green slates. Externally the silhouette has a dignified simplicity, the low broad lines of the elevations being dominated by the square central tower above the Shrine. Considering the building in greater detail, we first note the triple-arched entrance portico surmounted by a finely carved stone eagle. Below the cornice, carved in Roman capitals, is the RAF motto: PER ARDUA AD ASTRA. On one side of the entrance is a caretaker's room and on the other a rest room where the register of names will be kept. The outside walls of these features bear the inscription: "In this cloister are recorded the names of Twenty Thousand Airmen who have no known grave. They died for freedom in raid and sortie over the British Isles and the lands and seas of northern and western Europe."

The doors to the portico are of glass in silver nickel frames, having as their decorative motif the lion *passant* repeated in panels between bars in horizontal pairs. These fill the spaces admirably and are excellent specimens of craftsmanship. From the vestibule, a triple-vaulted chamber, access is gained, right and left, to the cloistered arcades which contain 46 "chapels," each of which has two tall narrow windows deeply set in the wall and casting a side light on the widely splayed panels, resembling "open pages," on which and on the inner wall faces, the names are incised in small Roman capitals. On the coffered ceiling of each "chapel" are emblazoned the appropriate arms of the United Kingdom and the Commonwealth.

The arcades, which are carried on columns having voluted capitals of distinctive design, embrace us on all sides, and with the rhythm of their arches carry the eye round to the Shrine and to the end windows and curved wings opening out to the superb view beyond. The Shrine itself, a fine cross-vaulted chamber, is entered both from the cloisters and centrally through a single great arch, over which are three symbolic figures—Victory between Justice and Courage. The interior is furnished with oak kneeling boards and provision is made for floodlighting from metal bowls on the walls. Features of the Shrine are the painted vault and the great north window.



The North-West Cloister. Below : The figures of Justice, Victory and Courage over the arched entrance to the Shrine, carved by Vernon Hill.

View inside the Shrine, looking towards the Garth.

THE PAINTED VAULT OF THE SHRINE

The painting by Mr. John Hutton on the ceiling of the Shrine is divided into four curved sections. The background is of cerulean blue scattered with gold stars and faint clouds. In the centre are the four phases of the moon, and from the directions of the North, South, East and West fly the figures of the Four Winds blowing their streams of air before them.

The North Wind, flying gustily from above the Great Window, is cold and icy in colour. The East Wind, to the right as one faces the window, is also cool in colour but more steady in flight. The West Wind is warmer in colour and flies with great force, while the South Wind is wafted gently along in sunshine.

In the North Wind's quarter of the ceiling is the planet Mars patterned with canals and seas. In the East Wind's quarter is great Jupiter with his bands and many moons. With the South Wind is the ringed planet Saturn and with the West Wind, the beautiful spiral nebula in Andromeda.

Photo : T. G. Stemman

One of the Supporting Angels in engraved glass, executed by John Hutton, in the great North Window of the Shrine (seen to the right).

All these, the stars, planets, clouds, winds and moon are the forces which reign over the sky of the night flier and accompany him in his passage across the heavens.

Colour is effectively used elsewhere, notably in the ceilings of the curved wings and their terminal " look-outs."

GREAT NORTH WINDOW OF THE SHRINE

The design, also by Mr. John Hutton, engraved on the glass of the great north window in the Shrine is symbolic of the words from the 139th Psalm forming the central part of the window : " If I climb up into heaven, thou art there ; if I go down to hell, thou art there also. If I take the wings of the morning, and remain in the uttermost parts of the sea, even there also shall thy hand lead me ; and thy right hand shall hold me."

On each side of the scroll on which these words are engraved stands a supporting angel with tall wings and a long slender trumpet. Immediately above are the sun and moon and poised over them the " Wings of the Morning."

Above the angels' wings are engraved designs of vapour trails from aircraft in battle. The origins of these patterns were actual photographs of the sky over England during the Battle of Britain.

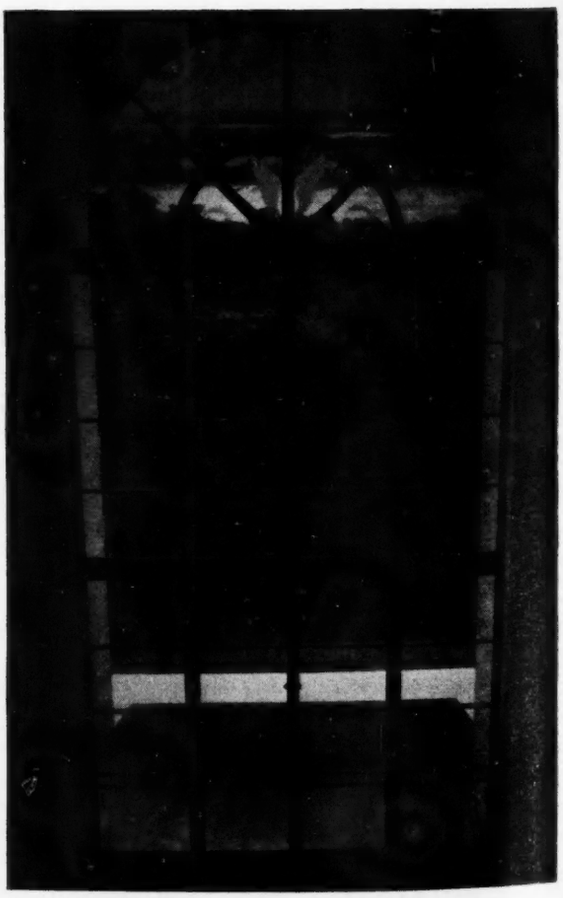
Surmounting these is the semicircle of the heavens with two great constellations which have guided navigators in the darkness since the earliest days—the Southern Cross with the South Polar Star on the left and the Plough or Great Bear with the North Polar Star on the right. On the top panels of the doors below are two other constellations used in air navigation, Scorpio, the Scorpion, on the left, and Pegasus, the Winged Horse, on the right.

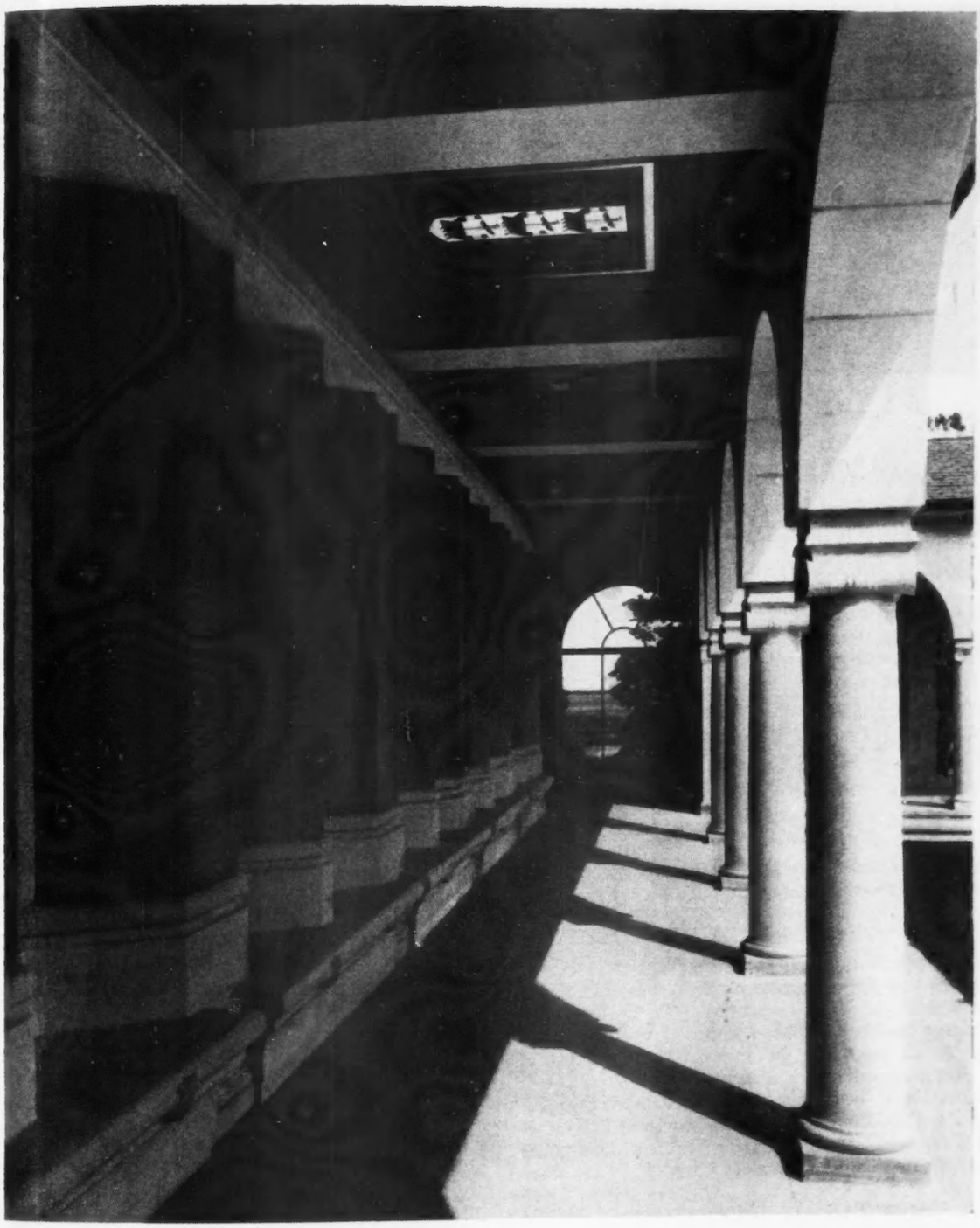
The whole of this design was carved into the clear plate glass with a grindstone as the only instrument, parts being left opaque and parts polished as in cut crystal. The window remains mainly transparent and so all the time the words, angels and stars float in the air above the magnificent landscape stretching from the River Thames into the far distance.

In the Shrine, close to the entrance, built in the thickness of the wall and entered through simply designed wrought-iron gates painted in green and gilt, are two circular stone staircases leading up to a stone gallery, also in the thickness of the wall, from which one can look down into the Shrine. The staircases lead on to a chamber above the Shrine, from the windows of which views can be obtained on all sides. In the centre of this chamber is a further circular staircase leading to a roof lantern, through a door of which the roof of the tower is reached, affording splendid views of the surrounding country over the tree tops. Surmounting the tower is the Air Force crown of wings and stars with a golden star above, which will be lighted at night.

A word of praise is due to the builders and their craftsmen for the uniform excellence of their workmanship. Mr. Maufe has created a fine work of art, a building at once serene, dignified and impressive, crystallising memories and emotions too deep for words.

G. J. H.

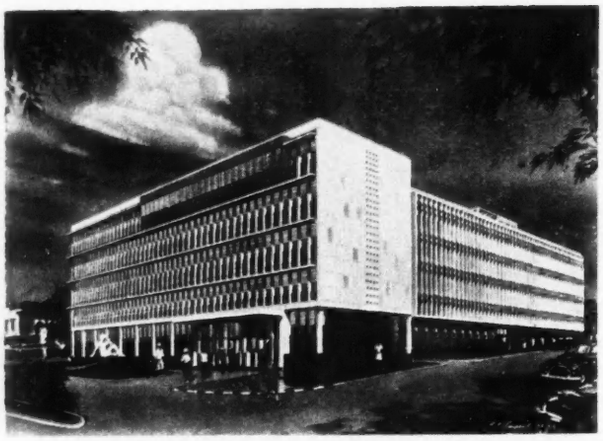




The West Cloister. The names of the missing are carved in Hadene stone on wall panels resembling "open pages."

Sub-contractors and suppliers were: Portland stone, Nine Elms Stonemasonry Works; name panels in "Hadene" stone, supplied by Dene Quarries (Derbyshire), Ltd., of Matlock, and worked by the Nine Elms Stonemasonry Works; Westmorland green slates, Roberts Adlard and Co., Ltd.: silver nickel entrance doors, J. Starkie Gardner, Ltd.; windows, C. E. Welstead, Ltd.; electrical work, Barlow and Young, Ltd.; wrot iron work, metal vane and grille gates, William Pickford, Ltd.; ironmongery, Yannedis and Co.; lightning conductor, W. J. Furse and Co., Ltd.; rainwater goods, Frederick Braby and Co., Ltd.; York stone paving, paving to Shrine and Stone of Remembrance, Holloway Bros. (London), Ltd.; oak block flooring, Horsley Smith and Co. (Hayes), Ltd.; reflector brackets, Osler and Faraday, Ltd.; plate glass for great north window, the London Sand Blast Decorative Works, Ltd.; carving inscriptions, Barry Hart; oak seats and kneelers, Dart and Francis, Ltd.; painting, gilding and decorating ceiling panels and furniture to waiting and porter's rooms, Heal's Contracts, Ltd.; chairs, Mealing Bros., Ltd.; elm seats, S. J. Lethbridge (Plymouth), Ltd.; and paints, Dixon's Paints, Ltd.

AIR FORCES MEMORIAL, COOPER'S HILL, near RUNNYMEDE



Perspective of winning design.

UGANDA ELECTRICITY BOARD

Competition for New Head Office Building, Kampala

The assessor, Mr. N. L. Hanson, BArch, ARIBA, MIA, of Johannesburg, recently made his award in this competition. This was published in our issue of September 4, and is as follows :—

1st (£1,000). *E. I. Groff, of Johannesburg.*

2nd (£750). *Peatfield Mayo and Bodgener, of Blackheath, London, SE3.*

3rd (£500). *Nurcombe, Summerley and Lange, of Johannesburg.*

4th (£250). *J. M. Shunn, of Johannesburg.*

Highly commended were the Planning Group of Cape Town, and H. Bramhill and G. Subiotto, both of London.

AUTHOR'S REPORT ON WINNING DESIGN

THE proposed building has been planned in blocks providing for a minimum of west-facing offices and a maximum of air circulation. The author considers the building to be a satisfactory architectural entity which can only be improved by the future extension as shown on the drawings.

Offices have been planned to a depth of 16 ft., being the maximum for a satisfactory distribution of natural daylight. As office areas required subdivision in 50 ft. multiples, a module of 3 ft. 3 in. thus resulted.

The Produce Exchange and Lint Marketing Board being of a different character and function to the rest of the accommodation were planned as articulated single-storey units integrated with the remainder of the scheme.

This allows for the necessary introduction of top lighting to the stores, an economical structure over the large volumes, and sound insulation of the produce exchange.

Structure.—The structure designed gives complete flexibility to office layout with an uninterrupted $7\frac{1}{2}$ in. deep reinforced concrete slab to carry $4\frac{1}{2}$ in. partition walls on the module. The external columns have been placed on each module, and the short span between results in the elimination of external beams. This also gives a completely symmetrical window to room relationship. Two beams carry corridor walls and extend the length of the building spanning on to columns at 13 ft. centres.

The Lint Marketing Board stores and Produce Exchange are roofed with light metal trusses covered with "Robertson's" protected roofing. Over the Lint Marketing Board stores a saw-tooth roof truss has been used and over the Produce Exchange a sloping roof supported on exposed light metal lattice trusses treated as an architectural feature from within. These roofs are considered suitable and economical. Insulation is provided in the space between the roof covering and the ceiling.

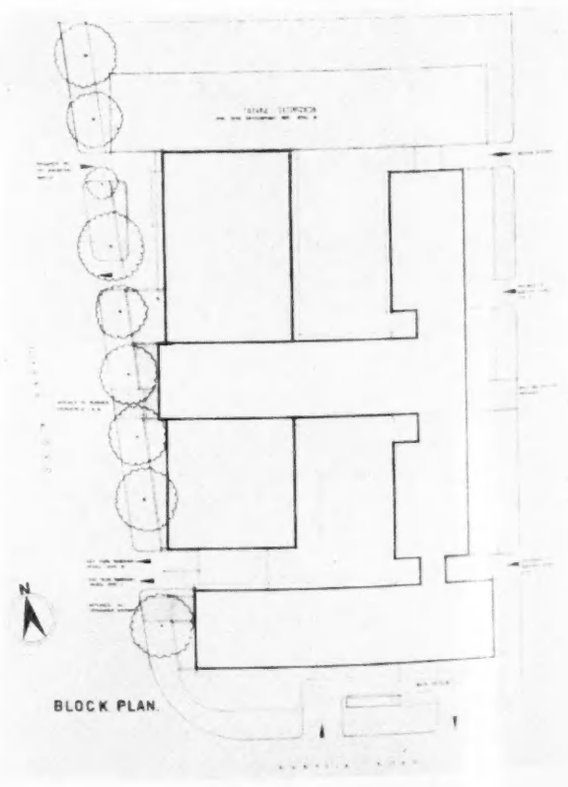
Vertical circulations.—The main circulation is at the junction of the two main office blocks. The secondary circulation is near the service core, which relates to the Asian and African rest-rooms, the staff entrance to the kitchen, the bicycle entrance to the basement, and the caretaker's flat on the roof.

Cloakrooms.—The four units required on each floor, together with the tea kitchen and cleaners' room, are contained in one unit readily accessible from all parts of the building. This centralises plumbing services. Additional cloakroom units are visualised in the future extensions. The African and Asian rest-rooms and additional cloakroom facilities required by the Produce Exchange are combined with those of the kitchen staff and placed near the cloakroom core.

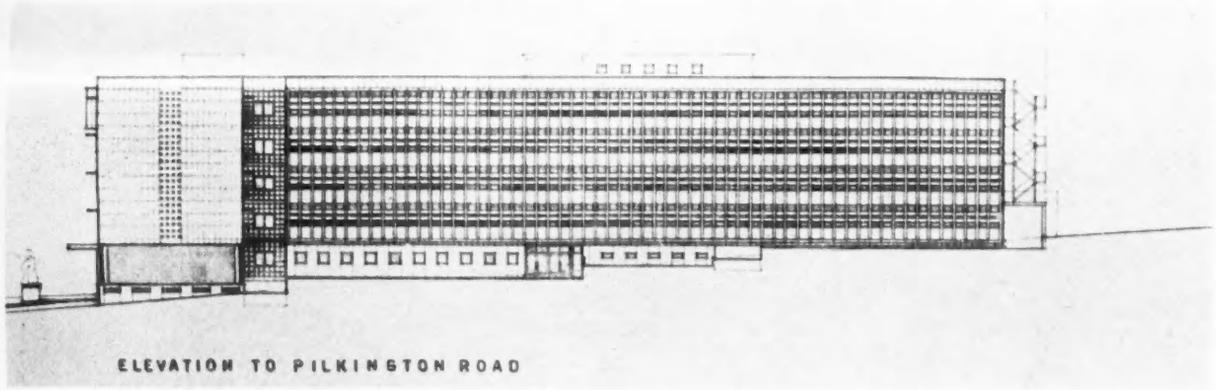
Departments.—The departments in complete units have been planned on one or more floors. Where no mention is made in specific departments to office messengers, these will be catered for in the widening of the corridors in the links.

Chairman's suite.—This unit has been closely related to the main vertical circulation. Similarly the other heads of departments have been placed for the most part in the same relative position on different floors. The Chairman's suite and boardroom have been cantilevered from the normal external face of the office blocks to improve the proportion within these rooms.

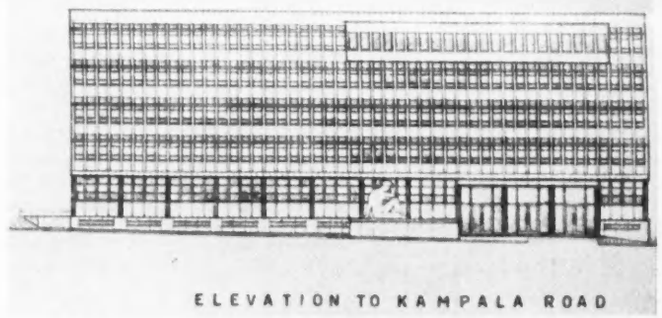
Restaurant.—The restaurant is placed at ground level, affording easy service access from Pilkington-road. The planning of the private dining-room on the east façade has been chosen in favour of being placed adjacent



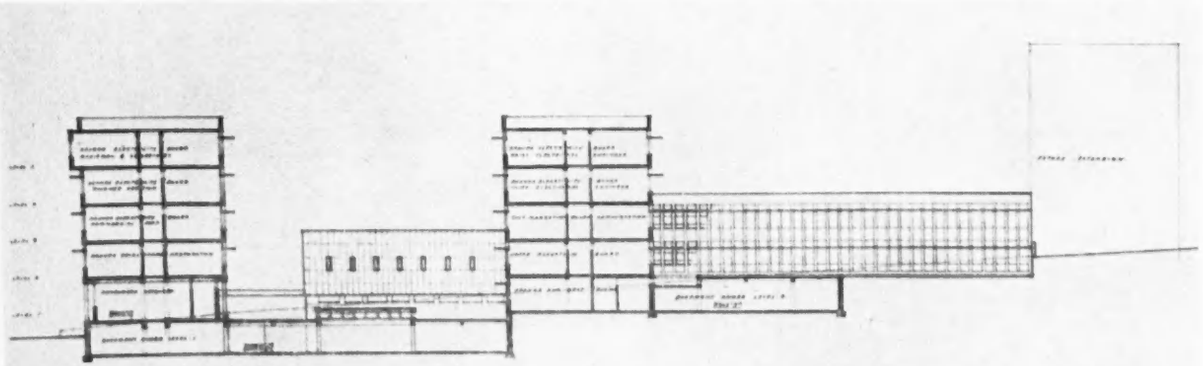
Block plan of winning design.



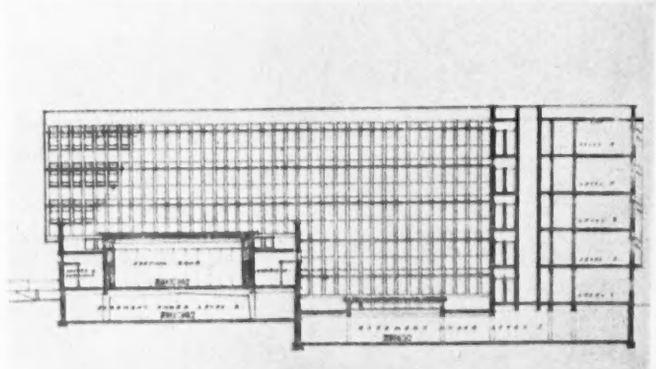
ELEVATION TO PILKINGTON ROAD



ELEVATION TO KAMPALA ROAD



SECTION AA



SECTION BB

COMPETITION FOR NEW ELECTRICITY OFFICES, KAMPALA : WINNING DESIGN : E. I. GRAFF, BArch(Rand), ARIBA, ARCHITECT

to the kitchen on the west façade, as service through the restaurant proper is not considered serious.

Sun protection.—Adequate sun control is obtained from a 3 ft. projecting hood over windows on the north and south façades. More elaborate protection is necessary on the east and west and is obtained by fixing inclined precast terrazzo horizontal louvres between 2 ft. projecting vertical fins. Tinted glass in adjustable louvred windows provides the necessary sun protection and ventilation to the Chairman's suite and boardroom.

Ventilation.—The typical office is ventilated by means of the steel windows below the hoods, adjustable louvres between the hoods and the underside of the slabs and high windows to the corridors. All corridors are adequately ventilated.

SCHEDULE OF FINISHES

External Finishes

White precast terrazzo fins, facings and fixed louvres. Grey precast terrazzo spandrils. (Economy can be effected by substituting plaster for the above on external wall facing on to internal court.) Mosaic facing to free-standing columns and walls where shown on ground floor. Dark grey precast terrazzo facing to basement and garden walls. Bronze grilles to basement openings. Bronze doors and frames to entrances.

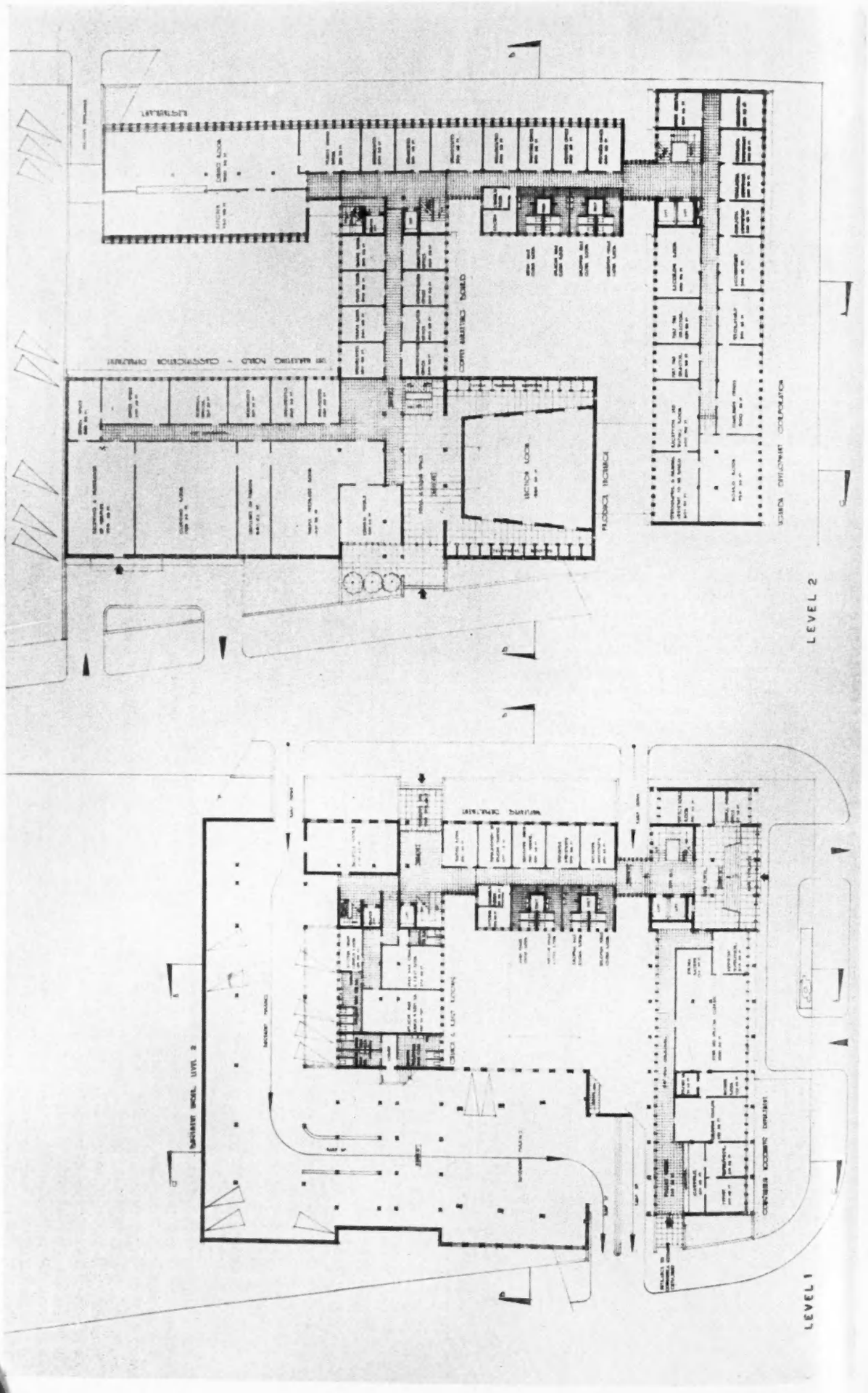
Internal Finishes

Entrance foyer.—Terrazzo floor. Mahogany panelling. Plaster and paint.

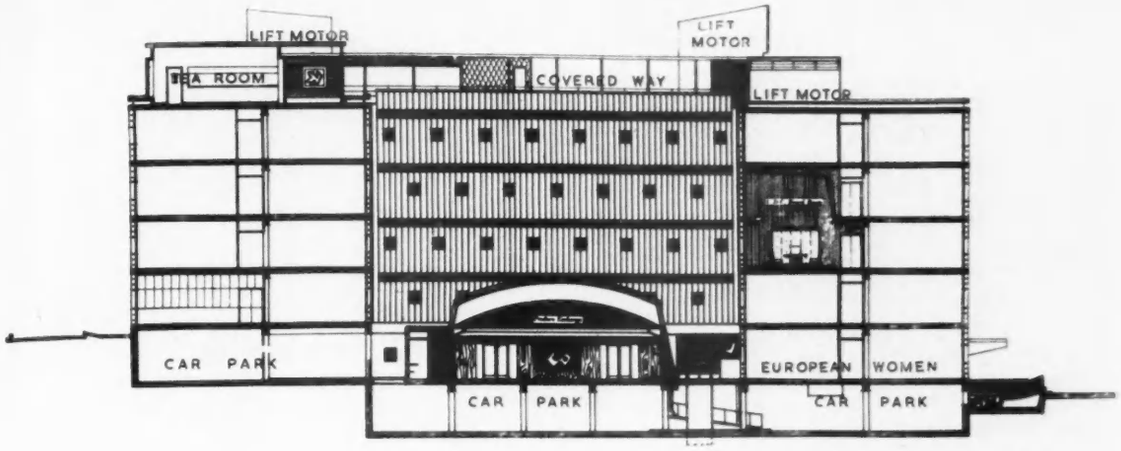
Secondary entrances.—Terrazzo floors. Terrazzo dadoes.

Corridors and lobbies.—Asphalt tile floor. Terrazzo dado.

The total estimated final cost of the scheme is £368,104.

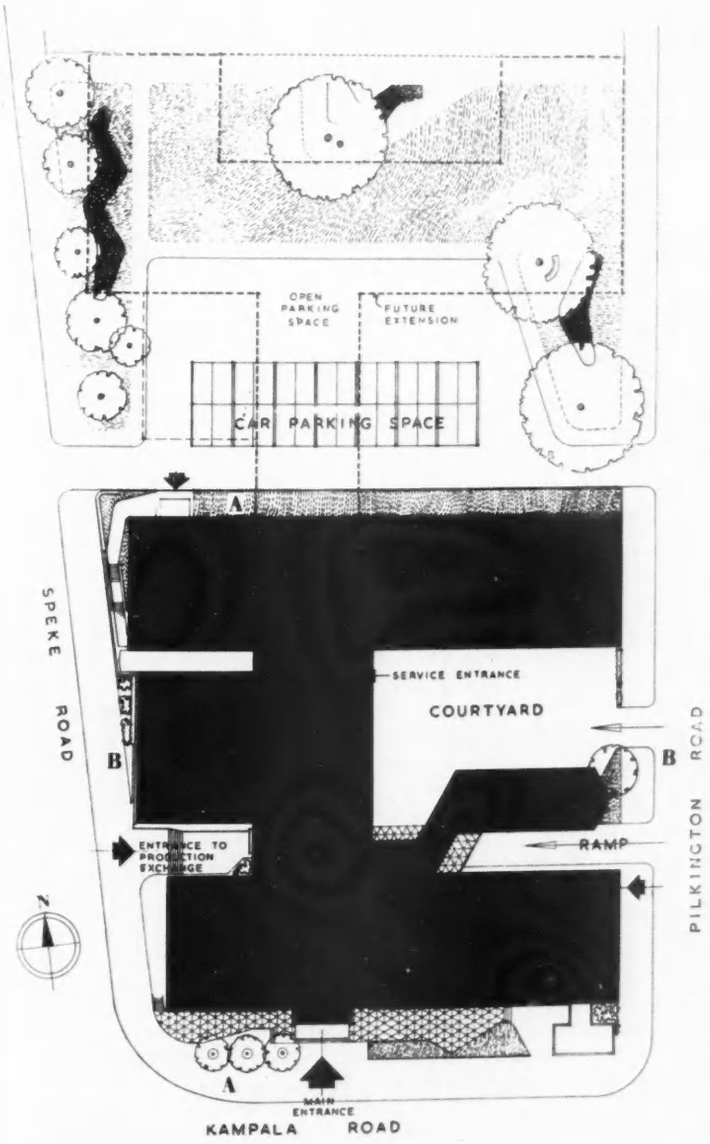


COMPETITION FOR NEW ELECTRICITY OFFICES, KAMPALA: WINNING DESIGN: E. L. GRAFF, B.Arch(Rand), ARIBA, ARCHITECT



SECTION A-A

COMPETITION FOR NEW ELECTRICITY OFFICES, KAMPALA



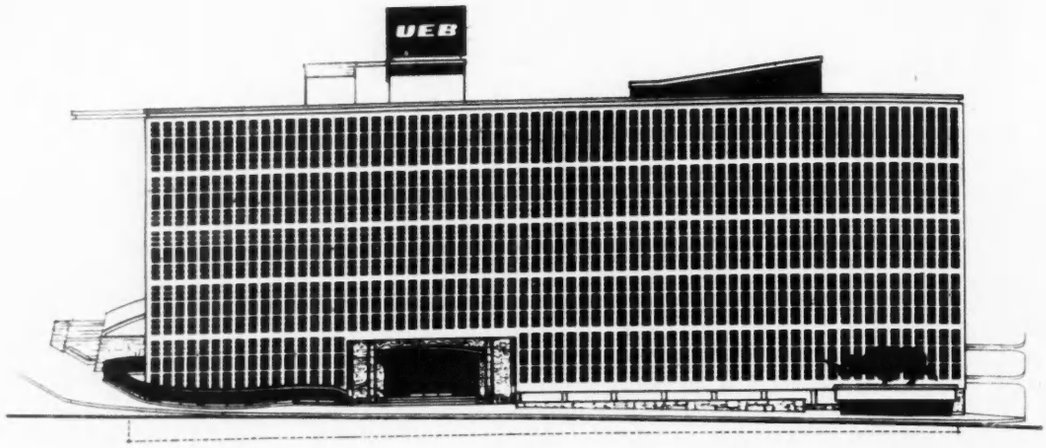
DESIGN PLACED SECOND
By PEATFIELD MAYO AND BODGENER, AA.RIBA

IN this design the principal blocks of the building have been planned to run with the contours of the site and so to be spaced apart that, owing to the slope of the ground, the rear block is at a convenient storey height above the front block. The scheme makes use of the cross fall of the site to limit the length of the approach ramp to the basement under the south block, and to provide the remainder of the car-parking area without the necessity for extensive excavation.

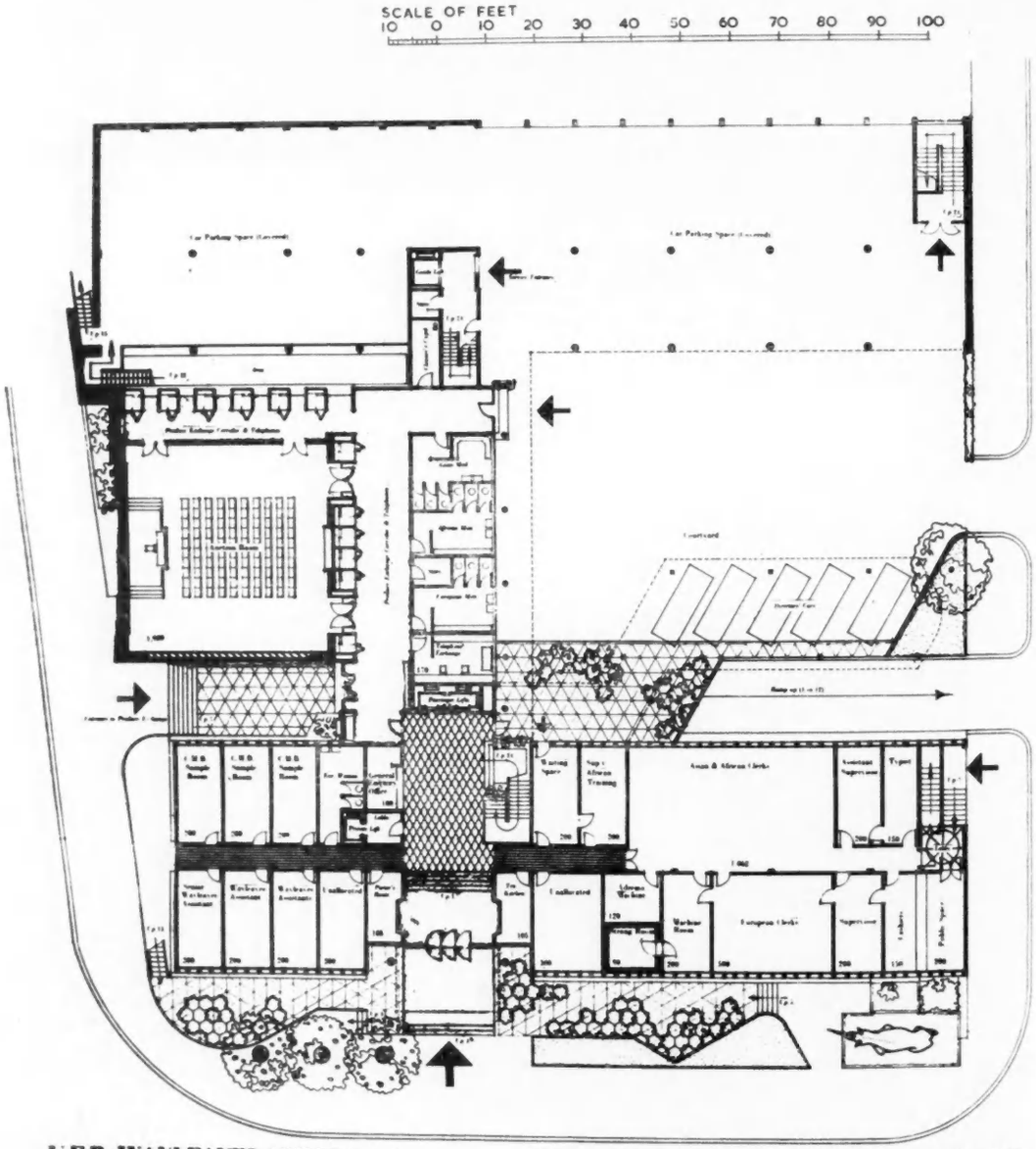
The planning allows each separate user of the building, and in most cases the separate departments of the Electricity Board, to occupy either a complete floor or floors, or a definite and self-contained suite.

The building has been kept within the shape formed by the three blocks, with very little one-storey accommodation. This takes the greatest advantage of the site with respect to the permissible amount of site coverage. Wherever possible, the office space on the east side of the link has been designated for sections of departments having some general use, such as typing pools, general offices and messenger rooms.

The buildings have reinforced-concrete structural frames and external walls of 9-in. concrete block masonry. The total estimated cost is £349,420.



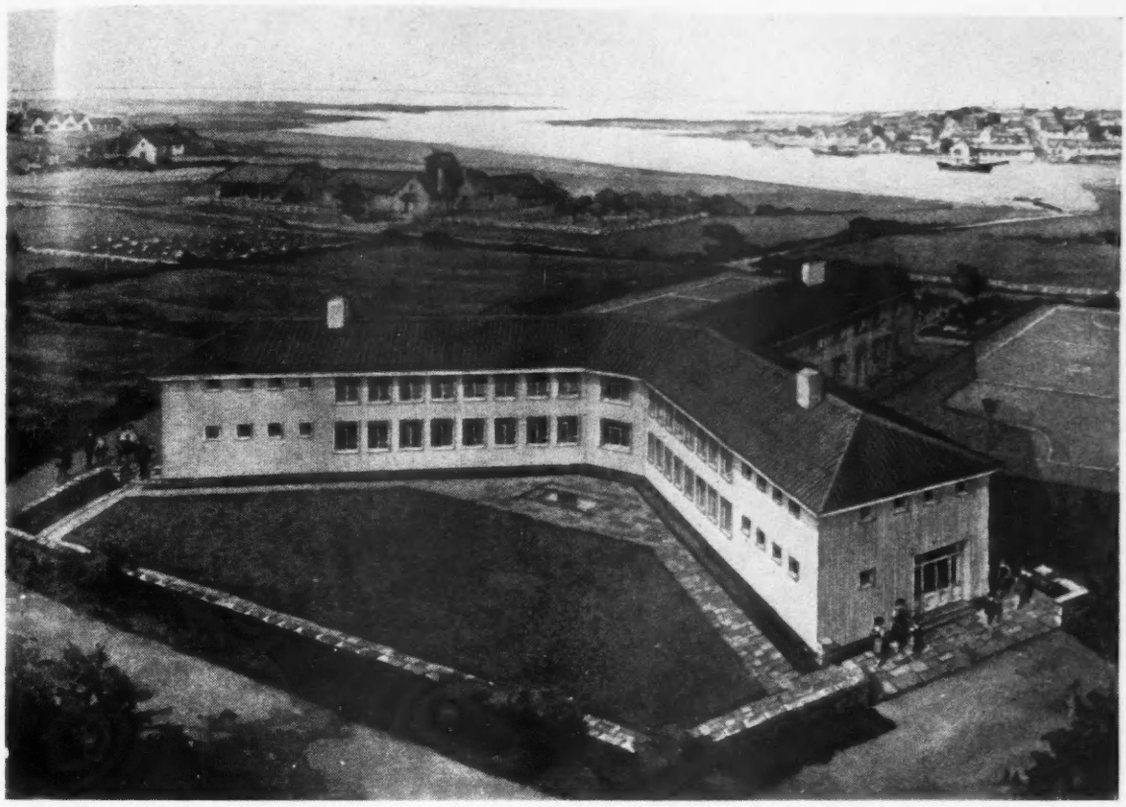
ELEVATION TO KAMPALA ROAD



U.E.B. WAYLEAVES ASSISTANTS

U.E.B. CHIEF ACCOUNTANT'S DEPARTMENT (CONSUMERS' ACCOUNTS)

COMPETITION FOR NEW ELECTRICITY OFFICES, KAMPALA: DESIGN PLACED SECOND



Drawn by Walter H. Clark.

Sketch of the proposed boarding school in the Falkland Islands.

SCHEME FOR A BOARDING SCHOOL IN THE FALKLAND ISLANDS

Architect : WALTER H. CLARK, FRIBA

THE Falkland Islands, a British dependency, are situated to the east of the southernmost point of South America, and the Falkland Islands Co., Ltd., has been active there since 1852. The company's chief industrial interest, carried out in the two main islands of East and West Falkland, is sheep farming for the production and export of wool. Their employees, mostly of Scottish descent, are in consequence dispersed in settlements and outposts over a wide area giving rise to an education problem which is now to be solved by the building of a central boarding school for children of various ages.

It has been decided that the school shall comply with the standards for school premises regulations, 1951, laid down by the Ministry of Education.

Goose Green has been selected as the locality most favourable for the school, situated as it is in East Falkland near a neck of land separating Brenton Lock from Choiseul Sound, and adjacent to the Darwin Settlement, which is both a port and the centre of the company's activities.

The flat and treeless character of the islands and their geographical position in the " roaring forties " make them subject to very high winds and low temperatures at certain seasons of the year. All factors having been taken into consideration it has been determined that a two-storey prefabricated timber structure will be most suitable for the purpose.

Being situated in the southern hemisphere the most favourable aspect for the classroom blocks is north-east and north-west while that for the central administration wing is due east and west.

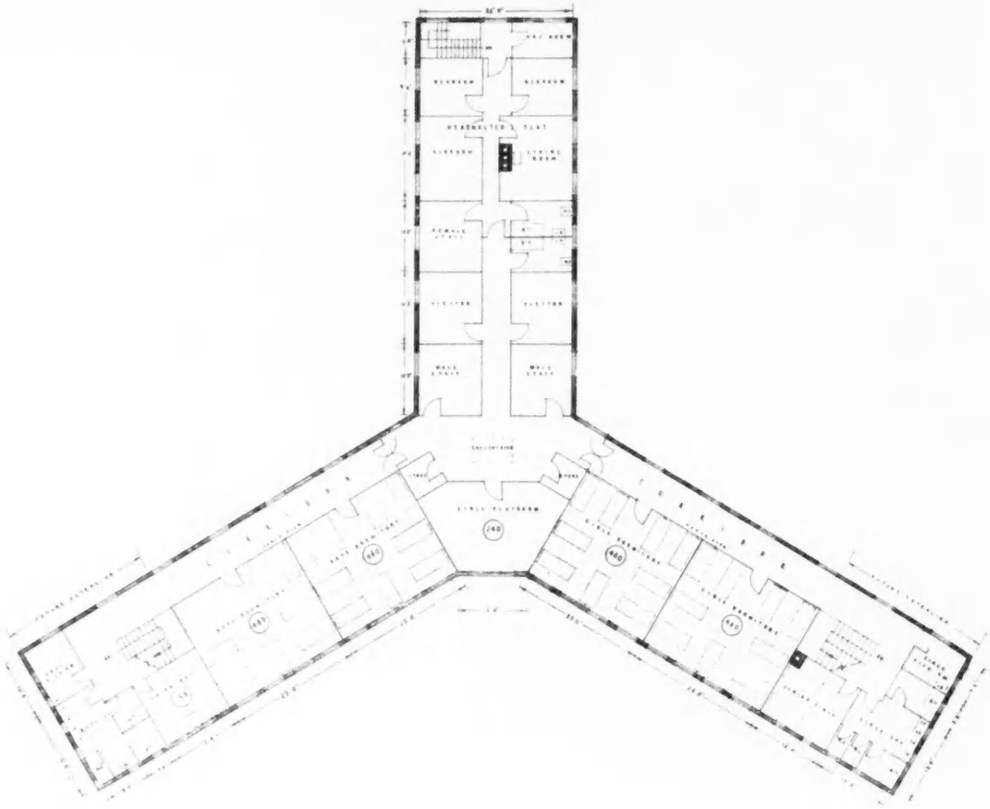
The boundaries of the site are not prescribed in any way and a " Y " shaped plan had been found to have certain advantages. In this case it allows for future extensions at right-angles to the extremities of the classroom blocks without necessitating additional staircases or radical rearrangement of the present plan.

The three wings of equal span and also the regularity of the fenestration are designed to simplify construction by means of completely prefabricated sections of similar dimensions.

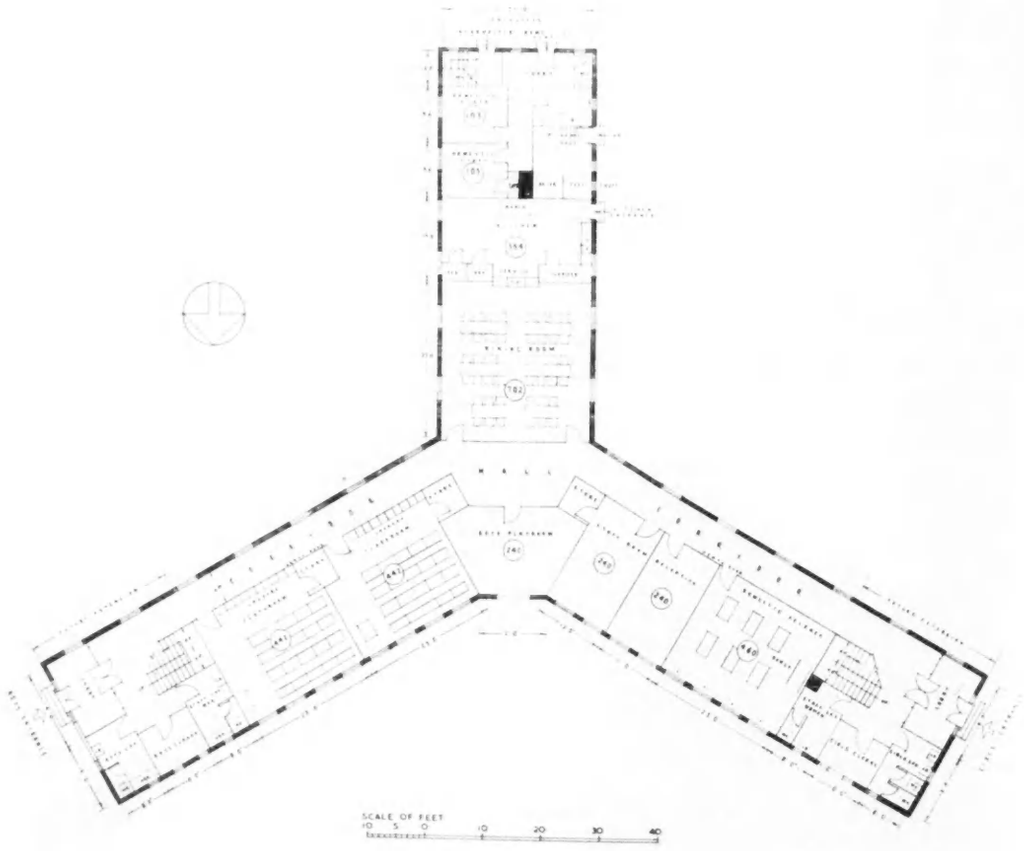
Glass areas and room heights have been reduced to a minimum in order to reduce heat loss, and for the same reason all main entrance doors have been protected by internal lobbies. The depth of the classrooms is sufficient for them to contain lockers along the corridor wall allowing the desks to be so situated as to provide adequate daylight to those farthest from the windows.

Supervision of the pupils is facilitated by placing the head master's and teachers' living accommodation centrally between the boys' and girls' wings, and if it should be desired to make these latter entirely independent of each other, the staff and reception rooms on the girls' side can be interchanged with one classroom on the boys' side without affecting the structure.

A heating system by means of hot-water radiators served from solid-fuel boilers is to be installed. Electric lighting is foreshadowed, but at the present time there is no public service available.



SCHEME FOR A BOARDING SCHOOL IN THE FALKLAND ISLANDS



Ground- and first-floor plans.

WESTMINSTER ABBEY

Nineteen Urgent Tasks Listed by Surveyor to the Fabric

A SAVE-THE-ABBEY WEEK, when an appeal will be made to the whole nation, is to be held from Sunday, November 15. Prominent Church leaders, including the Archbishop of Canterbury, will give a series of addresses in the Abbey during that week on the theme—"Forward from the Coronation." This announcement was made on October 6 by the Dean of Westminster, Dr. Alan Don.

"Within 24 hours of the appeal by the Abbey for a million pounds being launched by the Prime Minister," said DR. DON, "there occurred the tragic East Coast floods. When the Lord Mayor opened his fund we immediately suspended our activities. By May the Coronation was upon us, and had the unexpected effect of obscuring our needs. Nine months of Coronation Year have passed, and we still have to raise about £600,000 in the remaining three months.

"While the greater part of the contributions so far received have come from this country, I would pay a tribute to the magnificent support we are receiving from the Commonwealth. The Prime Ministers of Australia and New Zealand have launched appeals, and special efforts are in progress in South Africa, Canada and many other countries.

"Obviously, if we are to raise sufficient funds with which to save the Abbey and put it on a sound basis for the future, a very special effort is required. It has therefore been decided to organise a national Save-the-Abbey Week from Sunday, November 15.

"With this object in mind, a series of addresses has been arranged with the theme 'Forward from the Coronation,' to be given each evening at 6.0 p.m. during Save-the-Abbey Week. In addition, there will be short lunch-hour services of intercession each day in the Abbey, followed by organ recitals.

"Many other activities are planned. Approaches are being made to mayors and local authorities in different parts of the country, and it is hoped that appeals will be supported during that week by the civic heads of many cities, towns and boroughs."

THE SURVEYOR'S REPORT

A statement headed "Nineteen Urgent Tasks" was issued the same day in co-operation with the Surveyor to the Fabric, Mr. S. E. Dykes Bower, FRIBA, FSA.

The following is the text of the statement:

The Surveyor of the Fabric made a report last year to the Dean and Chapter giving a list of nineteen repairs, many of a costly character, which are vital and urgent.

These brief notes, based on the report of the Surveyor, give an outline of the work involved. It will be seen that the estimates of the amounts required for immediate capital expenditure upon repairs come to £362,500, a total that is £32,500 in excess of the £330,000 given in the appeal. This is due to rises in costs of materials and labour since the estimates were first prepared.

1. *The Parapet on the West Side of the South Transept.*—This pierced parapet, 60 ft. long, is in a precarious condition, so much so that it ranks first on the list of repairs. In fact, work has already begun on this. A fracture has caused its whole length to lean inwards, and it is now only held from collapse by wooden shores. If the parapet had leaned outwards it would probably by now have fallen, smashing the roof of the triforium below.

The whole parapet will have to be rebuilt, exactly as the corresponding parapet on the east side of the transept was rebuilt about twenty years ago.

2. *The Parapet on the South Side of the Nave.*—This is regarded as the second most urgent task. The length is 160 ft., nearly three times that of item 1. From the ground it can be seen that in several places where stone has perished brickwork has had to be built in to ensure temporary stability. The parapet on the north side of the Nave, which is simpler and not pierced like the one on the south, had to be rebuilt some years ago.

This will be a major operation, for all the stone has perished and the whole will have to be reconstructed in stone that will resist the London atmosphere. Estimating the cost accurately is impossible, but it will probably be about £20,000.

3. *The Apse Parapet.*—The stone here has perished in the same way to an extent only slightly less serious than on the south side of the Nave. As soon as the latter has been dealt with, this parapet, 100 ft. long, will also have to be completely rebuilt. The cost is expected to be about £15,000.

4. *Pinnacles and Flying Buttresses.*—Among the most graceful features of the Abbey are the flying buttresses surmounted by lofty pinnacles which terminate in carved finials. Many of these finials are missing or have had to be removed, and of those remaining several are unsafe. Some pinnacles are rapidly becoming dangerous and will have to be scaffolded and restored.

The stonework of the flying buttresses has suffered badly from the effects of atmospheric pollution. Although much stone may be saved if remedial work can be undertaken in time, a great amount has already decayed too far and will have to be cut out and renewed.

Each pinnacle is high up and will require separate scaffolding. Until such scaffolding is erected it is difficult to gauge the amount of work involved, but the total expenditure under this heading will not be less than £30,000.

5. *South-West Tower.*—General restoration work was carried out on the North-West Tower before 1939, but although greatly needed on the South-West Tower, war compelled its postponement. It is now very urgent and will cost about £15,000.

6. *Henry VII's Chapel.*—Though extensive work was done to the interior of this Chapel during the 1930's in securing the vault and cleaning the stonework, much repair is needed externally to pinnacles, parapets and stonework generally. This will cost about £15,000.

7. *North Transept Front.*—When this was restored in the last century there was every reason to expect that the work would last for centuries. It is an indication of the devastating effect of the London atmosphere that already much of this stonework, less than a hundred years old, is perishing.

An expenditure of about £10,000 will be necessary to arrest further deterioration.

8. *General Repairs.*—In various isolated places, on the north side and elsewhere, stonework is demanding attention. While it is impossible to estimate exactly the cost of repairs, an expenditure of about £18,000 is likely.

The Cloisters.—The condition of the Cloisters is so bad that the task here can only be described as "saving" them in the most skilful way possible. Every stone will have to be examined and dealt with individually, and this work will occupy skilled masons for many years.

It was here that the monks spent the greater part of their days. The upper part of the windows was glazed and there were probably wooden shutters in the lower part which kept out bitter winds in cold weather. As a concession to human frailty there was the Calefactory ("warming room"), where a monk could warm his hands at a glowing brazier.

Already much exquisite carved sculpture has perished beyond recall, and a large amount of stone has disintegrated to the entire loss of the original design. Recently intermittent falls of stone from the vault have made fresh inspection necessary, and if thorough repair cannot be carried out before the danger gets worse, it may be necessary to close some parts to the public.

This part of the Abbey restoration falls under these headings:

9. *South Walk.*—There is a great deal of work to be done.

10. *East Walk.*

11. *North Walk.*

12. *West Walk.*

13. *The Entry from Dean's Yard.*

14. *The Dark Cloister.*—This is one of the oldest parts, but is now very dilapidated. Careful treatment is needed to put it into sound condition.

15. *Entry to and the Little Cloister.*

16. *Glazing.*—It is proposed to restore glass to the upper parts of the Cloister windows as in medieval days, in order to reduce draught and the action of the weather which has been so deleterious to the stonework of the vaulting and walls. The total cost of work in the Cloisters may be about £83,000.

ROOFS

17. *Roof of the Nave.*—The roof of the Nave is 200 ft. long, and creeping of the lead sheets covering it has reached a stage when recasting and relaying of the lead has become unavoidable. The cost will run into many thousands of pounds.

18. *Other Roof Repairs.*—There are other repairs to be carried out to roofs, which are likely to cost well over £12,500.

CLEANING

19. *Interior Cleaning.*—While the exterior stonework of the Abbey has had to be restored more than once during the centuries, the internal stonework is practically all original, much of it dating from the 13th century. With the exception of those parts that have been cleaned in recent times, the interior is disfigured by the soot and grime of London, which has not merely changed the colour of the walls from white to a dirty chocolate hue, but is eating into surfaces and eroding moulded and carved decorations.

To prevent further serious damage, this corrosive coating of dirt must be removed. The work has to be done by hand and entails a great amount of scaffolding. The effect of cleaning can already be seen in King Henry VII's Chapel, and, when the process is extended throughout, the original colour of the Reigate stone and the Purbeck marble shafts will again be revealed and the Abbey will be transformed into a place of light.

The cost of this important work is expected to be heavy, somewhere in the region of £125,000.

SUMMARY OF URGENT AND ESSENTIAL REPAIRS

	£
1. Parapet—*South Transept*	9,000
2. Parapet—*South of Nave*	20,000
3. Parapet—*Apse*	15,000
4. Pinnacles and Flying Buttresses	30,000
5. South-West Tower	15,000
6. Henry VIIs Chapel	15,000
7. North Transept Front	10,000
8. General Repairs	18,000
The Cloisters. 9. South Walk. 10. East Walk. 11. North Walk. 12. West Walk. 13. Dean's Yard Entry. 14. The Dark Cloister. 15. The Little Cloister and Entry. 16. Glazing Windows	83,000
Roof. 17. Roof of Nave	10,000
18. Other Roof Repairs	12,500
Cleaning. 19. Interior Cleaning	125,000
	£362,500

In addition to the specific repairs noted above, there is always in a large building like the Abbey much day-to-day work in the maintenance of the fabric. To cope with this a permanent staff of skilled men is kept fully employed.

But to-day, owing to increased costs and the changed value of money, it is only possible to keep half the number of men that was considered barely adequate twenty years ago—and now this reduced staff is costing more.

Much of the deterioration in the building that is now so serious could have been avoided had it been possible to keep permanently at work on it a sufficient number of men. If the Abbey is to be safeguarded for the future it is imperative to double the staff and thus ensure that an emergency of this character does not again arise. For that purpose another £314,000 is essential to form an endowment fund.

Some of the greatest church music, now heard regularly throughout the world, was composed for the Abbey. Purcell and Gibbons, John Blow and William Croft are among the long line of famous composers who served as organists. Dating from the time of Elizabeth I, the foundation of the Choir is made up of 12 professional men singers (known as Lay Vicars) and 36 boys. The times of practice and services are such that the boys cannot attend ordinary school. For this reason there is a Choir School, which is part of the life and the music of the Abbey. All the boys are boarders. Fees paid by the parents are only a small part of the cost of this school. With rising costs, if the Abbey Choir is to continue upon its present basis, the school must be made financially secure. An income of at least £9,000 a year is necessary, for which an endowment fund of £260,000 must be provided.

The immediate repairs with these other two items total £936,500.

WORN-OUT HOUSES

Views at Conservative Party's Conference

AT the annual conference of the Conservative Party held at Margate last week, lively discussions took place on the housing situation, with particular reference to old and worn-out houses.

Speaking on October 9, MR. R. GRAHAM PAGE (North Islington) moved a resolution congratulating the Minister of Housing and Local Government on the outstanding achievement of building 300,000 new houses a year and urging that further efforts should be concentrated on the maintenance, improvement, and conversion of existing houses, especially in crowded urban areas, and on reducing expenditure on council house subsidies by encouraging house ownership.

The danger ahead, he said, lay in the possible creation of large estates of new houses on the fringe of our cities while the dwellings within those cities rotted away.

The 200,000 decaying houses which it had been estimated became uninhabitable each year, were setting the present building programme at naught. They must stop the rot, which was destroying more houses than Hitler's bombs had done. "We must monkey gland our mid-Victorian monsters," he suggested. At an average of £500 a house it would cost less to renew 300,000 houses a year than to subsidise 100,000.

MR. HARMAR NICHOLLS, MP, again recommended the encouragement of house ownership by a housing grant of £300 in place of the 60-year subsidy.

SIR DAVID ECCLES, MP, Minister of Works, rebutted the Socialist allegations that Mr. Macmillan had achieved his housing target at the expense of other kinds of building. Now that steel was unrationed, he said, in 1953 they had started £16m. worth of new factories a month, compared with £10m. at the same time last year; this was 10 per cent. more than in the best year of Socialism.

MISS B. BROOKES (Rhyl) called for cheaper house building. She asked whether builders were being "feather bedded," and whether there was sufficient competition in house building. The Minister should set up an inquiry and, if necessary, let the Monopolies Commission examine the price of building materials.

The Housing Drive

MR. HAROLD MACMILLAN, Minister of Housing and Local Government, said that, although in a cupboard in his office he had skeletons marked "Local Government Reform," "Housing Subsidies," "Rating and Valuation," and "Rent Restriction" which were dusted and paraded before every Minister when he took office, the Conservative Government had decided to defer dealing with them to concentrate on the housing drive.

He thanked all those who had helped to make a success of the housing drive. When he accepted the target of 300,000 houses at Blackpool he did not say that the Government would reach it. He did not want to make any prophecies now, but in the first eight months of 1953 more houses had been built than were built by the Socialists in the whole of 1951. The drive could not be carried on without continued co-operation from all concerned. Last year there was a shortage of steel, this year there had been a shortage of bricks and cement, and next year it would be something else.

It was not true that the Conservative Government were building houses for sale to the well-to-do and not for letting. At the end of June this year there were 40,000 more houses for letting under construction than last year, and nearly 70,000 more than in 1951. There were also 22,000 more houses for sale under construction than last year and 32,000 more than in 1951. There would be about 80,000 private houses for purchase next year. Like all members of the Party he was passionately in favour of owner occupation, but the Government would continue to meet the need for houses to let.

Much had been said about capital subsidies to prospective owner occupiers, but he would issue a word of caution. Apart from the difficulties of subsidising individuals, he hoped gradually to disentangle the country from the bog of subsidies. He did not want to get engulfed in them. He also had the uneasy feeling that subsidies tended to keep up costs, and he was now concentrating on bringing them down.

The resolutions on housing were carried, and that calling for a royal commission on local government finance was rejected by a large majority in the main hall, although in the overflow meeting the voting for and against was equal.

Prime Minister's Views

Speaking the following day, the Prime Minister, SIR WINSTON CHURCHILL, said: And what about 300,000 houses a year? I remember well at Blackpool three years ago how you clamoured for a tremendous effort and an audacious target, and how a gust of passion swept the hall when we proclaimed the goal of 300,000 houses a year.

I remember, also, how we were mocked by the Socialist Ministers, and told we were promising the impossible. One can quite understand how a politician who thinks more than half his fellow-countrymen are vermin cannot feel much enthusiasm for providing them with homes. "Homes for vermin" hardly seemed an inspiring theme for the Socialist Party. "Soak the rich," "Jobs for the boys," have a much more cheerful smack about them.

But we persevered and now this second year at least 300,000 houses to let or sell will actually be built. Moreover, we are building more schools than ever before. Who is the man who did it? Mr. Harold Macmillan. A fine piece of work for which his countrymen will always respect him and the capable building industry and makers of building materials who have served the nation well.

Nor must we forget those vigorous and practical Ministers who have helped him—Sir David Eccles and Mr. Marples. But building new houses by itself is not enough. Old houses must be kept in repair. Our Socialist friends are always reminding us that both the repair of old and the building of new houses count equally. One cannot succeed without the other.

The building of new houses was difficult, repairs of old houses might well be unpopular. So they stinted the one and neglected the other. We are well aware of the responsibility which falls upon us for the maintenance and improvement of houses which the conditions of war and wartime rent restrictions have robbed of their natural means of repair.

We must not be deterred from tackling this problem because of the prejudice excited by the word "landlord," because the com-

munity, as represented by the local authorities, is often the biggest landlord and charges often the higher rents. Funds must be drawn in from renewed private investment as well as supplemented by the State to enable dwellings which are falling or are in danger of falling into decay to be repaired, renewed and fitted with modern requirements.

Apart from these, the work of slum clearance on which the Tory Government before the war was so busily engaged must be resumed on an effective scale.

Ministry Official's Views

ABOUT A THIRD of our houses are worn out, incapable of being brought up to date, damp and unsuitable by modern standards, said the principal regional officer of the Ministry of Housing and Local Government, MR. M. TETLOW, speaking at Beverley (Yorks) on October 9. A third of the country's 13,000,000 houses were in this state, he said. Roughly a third of the houses in this country were built before 1860, another third between 1860 and 1914 and the remaining third between 1918 and 1939. A small margin of about one million had been built since the war. The vast majority of those in the first period were now worn out and formed one of the biggest problems the country had to face.

The only way to deal with it was to pull them down and replace them with new houses. Populations were increasing rapidly and the number of family units going up. The days of 14 children in a house had gone and the average unit was for three or four including parents.

Something like 4,000,000 houses between 1860 and 1914 were built in long rows of uninspired buildings. Sound structurally, they were, in the main, anything but convenient, fuel- and time-wasting and in many respects annoying places to live in.

Those houses built between the wars and since, were, by and large, satisfactory. Today's problem was not of housing demands only, for one had to look at the condition of the houses which continued to exist and were likely to do so for a long time. Some lacked electric light or bathrooms, and some were without water. Was it right that people should be condemned to live in them for the next 50 or 60 years?

The 1,000,000 houses built since the war had been put up at a colossal cost, and while they had been building new ones the old houses had been getting worse.

"The time has come when we must consider ways and means of making better or conserving housing assets that we have and making them more suitable for housing purposes than they are at the moment," he added.

LONDON'S HOUSING PROBLEMS

Lambeth's New Estate Opened

MR. HERBERT MORRISON, MP, spoke about London's housing problems when he opened the new Studley housing estate at Stockwell, Lambeth, on October 10. He said:

London's housing problem, like that of the great cities in other parts of the United Kingdom, is indeed a serious one. Built-up Greater London is scandalously large. The fact that this vast conglomeration exists at all is a grave reflection on past Governments, Parliaments and local authorities. Queen Elizabeth I, a great monarch and a great statesman, sought to limit the outward sprawl of the Cities of London and Westminster and to form a green belt round the built-up area.

But somehow she was side-stepped, and it was not until our time that a green belt was promoted and then protected by an Act of Parliament which it was my privilege to support on behalf of the London County Council. If this had been done 100 or even 50 years ago, it would have taken Londoners much less time to get to the natural green country, and the green belt would have been achieved at very much less cost to public funds.

The visitor to London from other parts of the country and from abroad may only know of the London of Trafalgar-square and Piccadilly-circus, but the fact is that London consists of many miles of streets of houses, shops and factories of varying characters, a large number of them dreary, out of date and awaiting redevelopment. So the local authorities, Government and Parliament between them are faced in the larger cities not only with the provision of better housing for the people, but with the vast problem of replanning, the demolition of worn-out property, the rebuilding of cities and the construction of New Towns nearer to the heart's desire.

And in the course of it, even though we build blocks of flats of five storeys and even more, we often find it difficult, if not impossible, if there is to be air and space about them, to rehouse a similar number of people from houses in congested areas. Moreover, public open space has to be provided.

So the municipal planners of Greater London are faced with the problem of still more spread and sprawl of this vast built-up area or of building upwards to the sky. So we are already faced with the prospect of London becoming predominantly a city of flats, a prospect which I must confess I do not like. That is why I am so glad that when it is possible you are mixing houses with flats.

The rebuilding, the replanning and the reorganisation of physical London is going to be a long job. It is going to be very costly both for the taxpayers and the ratepayers. In all this we have to consider the financial interest of those who live in municipal dwellings and those who do not. There are difficulties, I know, but I do not like local government being excessively financially dependent on Whitehall, for the consequence is that the powers of Whitehall to direct local government almost inevitably increase. I would like to find a new source of revenue for local authorities, revenue which they raise in their own right and can use at their own discretion within the law.

In the 1930s I unsuccessfully introduced into Parliament a Bill for the rating of land values in London. I still think that that important proposal is worthy of further consideration, he concluded.

Studley Housing Estate

The approved housing scheme for the Studley Estate provides for 820 dwellings. Despite the retention of portions of existing roads, which formed a grid-iron pattern within the roads forming the boundaries of the site, an informal layout has been devised and the monotony of rows of flats, varying only in their height, has been avoided.

Blocks of flats of three, four and seven storeys have been included in the first two contracts, but in the second stage of the development, which is to start shortly, "point" blocks of 10 storeys will be incorporated.

Space heating of all flats is by electricity, thereby constituting a "smokeless zone" of considerable area (only seven houses in the scheme have solid fuel heating). This method of heating has not only effected economy by the elimination of chimney flues and stacks, but has increased the living space within the flats and favourably influenced their planning. This, with further economies effected by the use of standardised prefabricated plumbing, has made it possible to provide slightly better finishes, such as wood block flooring, specially designed fireplaces for electric fires in living-rooms and hardwood fittings.

Architects for the scheme are Sir Lancelot Keay, Basil G. Duckett and Partners.

Problem of Providing Homes

SO great is the demand for homes in London that there is no hope of it ever being satisfied under the present system of housing provision. This opinion was expressed by MR. REGINALD STAMP, chairman of London County Council's housing committee, when he addressed members of the Housing Centre on October 5.

Mr. Stamp said that after the war there were some 50,000 names on the LCC's waiting list for homes: the number now stood at 163,885. Of these applications 57,000 were regarded as urgent crisis cases. At the moment the council were providing dwellings at the rate of 10,000 a year. Available sites were, however, diminishing rapidly and although 10,000 dwellings would probably be erected this year, the number next year would drop to about 8,000 and in the following year to about 5,000. Soon after that, under the present framework, the council would have to go out of the housing business.

Referring to the eight new towns being developed around London to absorb the overspill population, the speaker said that up to last year the number of people who moved in to the new towns was so negligible that he could afford to disregard their contribution. And most of those who did take up residence in these towns came from the outer suburbs and therefore there was no relief of the situation in the central area of London. Mr. Stamp added that more recently the new towns had begun to play a more significant part in helping to improve the general situation.

The response from industry to the idea of re-establishment in the country had been encouraging and the council had a waiting list of employers who had expressed a willingness to go.

Mr. Stamp went on to suggest that the housing problem of London could, in his opinion, partly be solved by the expansion of existing towns and he said that his committee was seriously interested in projects of this kind. They were in touch with no fewer than 62 out-county authorities who wanted to expand, and negotiations were being entered into in a number of cases. Most of the small towns could not afford to expand themselves. It was only the larger authorities who could provide the necessary capital outlay for such costly projects. He thought that it was only by this system of expansion that many towns would be able to survive.

SUBSIDY COSTS ON FLATS AND HOUSES

Relative Cheapness of New Expanded Towns

THE following memorandum, which demonstrates the high cost of subsidising flats with lifts on expensive urban sites compared with the cost of normal dwellings in new or expanded towns, has been prepared by Mr. F. J. Osborn, from the Planning Centre, WC2:—

HIGH DENSITY HOUSING OR DISPERSAL?

SCALE OF HOUSING SUBSIDIES, ENGLAND AND WALES, HOUSING ACT, 1952
(as at September, 1953)

Houses, urban: State £26 14s., L.A. £8 18s. p.a. for 60 years. Capitalised value £769 (A).

Houses, agricultural: State £35 14s., L.A. £5 p.a. for 60 years. Capitalised value £879.

Flats with lifts on land at

£1,500-£4,000 an acre: State £63 6s., L.A. £22 17s. p.a. Capitalised value £1,860.

£10,000-£12,000: State £71 8s., L.A. £25 11s. p.a. Capitalised value £2,094 (B).

£28,000-£30,000: State £88 19s., L.A. £31 8s. p.a. Capitalised value £2,600.

For London Region and County it is fair to contrast (A) and (B). Extra *site* cost of flat as against house is about £75 (houses at 12 and flats at 35 an acre). Extra *building* cost of flat of 4 rooms probably about £1,100. Extra capitalised subsidy is (£2,094 minus £769) £1,325. (Part of excess subsidy is to cover running cost of lifts.)

The flats subsidy is graduated for different prices of land so as to equate the site cost at 35 flats an acre. Where flats are built in excess of 40 an acre the subsidy is proportionately reduced.

A 4-roomed house in a new town costs to build about £1,500, including fees, plus site and development £250. Rents of flats and houses are much the same, though flats are commonly of smaller floor areas than houses. To account for the subsidy scale, flats must cost about £2,600 (£1,100 more than houses). See Note "A," below.

Flats in London, with lifts, are being built at 40 to 60 an acre, on land at £10,000 to £60,000 an acre (the latter an extreme case).

The outstanding and incontestable fact is that a lift flat on land at £10,000 an acre draws a subsidy of £2,094 capital value, which is £1,325 in excess of the subsidy on a house in a new town.

More than 10,000 dwellings a year are being built in the County of London and LCC estates. The London Plan proposes the building of 185,000 dwellings in the 20 years from 1951 (166,400 within the County).

I have often pointed out that each 10,000 dwellings built in multi-storey flats on £10-£12,000 land will cost in subsidies £13,250,000 *more* than 10,000 normal houses in new towns and expanded towns. About 35,000 people would be housed in either case.

It is possible that in some cases the unremunerative capital expenditure in establishing a new town may run into £2 or £3 millions, to provide homes and workplaces for 40,000 to 80,000 people. This alarms public opinion, but it is far less than the subsidy loss on multi-storey flats, which is accepted with unaccountable complacency.

NOTE "A"

HOUSES AND FLATS: CURRENT BUILDING COSTS (EXCLUDING SITE)

L.C.C., July 1953: 3-bedroom types:

Flat, balcony access:	3-storey	£2,230
	5-storey	£2,300
Staircase access:	3-storey	£2,240
	5-storey	£2,560
Maisonette, 4-storey		£2,340
House, in County (LCC)		£1,840
out-County (LCC)		£1,660

NOTE.—Lifts are supplied in blocks of 5-storeys and over. Cost of maintenance of flats higher than that of houses. (LCC Housing Committee: July 14, 1953.)

John Laing, Ltd. (per Mr. Sydney Greenwood, ARIBA)

Flat, 5 or 6-storey : 55s. to 60s. per sq. ft. of net floor and of dwelling (800 ft. =£2,200-£2,400).

6-storeys and up: 60s. to 65s. per sq. ft. (£2,400-£2,600).

Usual area of 3-bedroom flat just under 800 sq. ft. (Information received August 12, 1953.)

Welwyn Garden City UDC

3-bedroom house (1953). About £1,500 (over 800 sq. ft.)

FLATS IN THE CITY

Proposals for More Residents Rejected

THE possibility of bringing residents back to the one square mile of the City of London was the subject of a long debate at the meeting of the Court of Common Council on October 8. A proposal to consider the possibility of developing some of the outlying parts for residential purposes was defeated.

Presenting a report by the special committee, SIR CULLUM WELCH, chairman of the committee, said that in view of the high rents which it would be necessary to charge for flats of the quality suggested, his committee could not advise the court to enter into any such scheme. However desirable such a plan might be, finance must weigh.

CAPTAIN INSTONE moved an amendment to refer back the report, with instructions to the committee to confer with the City's consultants as to the possibility of developing, on economic lines, some of the outlying parts of the City, particularly in the district of Tower Hill. He said that the City could not continue to be a living entity without citizens, and asked for a policy of balanced rebuilding to save it from "residential night-starvation."

MR. H. S. SYRETT, seconding the amendment, said that it was a vital and pressing problem. If matters continued as at present the voters would ultimately disappear altogether. He believed there would be no difficulty in securing the high rents.

MR. PAUL PAGET, LRIBA, while admitting the high cost of residential accommodation, urged the advisability of looking into the possibility of the Tower area, where there were a live parish and the necessary amenities. As to the demand, he said he had approached certain big concerns and the response amazed him. He asked the special committee to call on responsible people for informal consultation. If the corporation gave the necessary leadership the finance would be there.

Replying to the debate, SIR CULLUM WELCH said that in six or seven years' time, when the cost of acquisition, and perhaps of building might be lower, the problem could be reopened.

The amendment to refer back was lost by a large majority and the report of the special committee received.

KINGSTON STUDENTS

Mr. Robert Paine's Address

THE Students' Prize Distribution of the South-Eastern Society of Architects took place at the School of Art, Kingston-on-Thames, on October 8. The students were addressed by Mr. Robert Paine, ARIBA, ARCA, the society's president, who in the course of his speech said:—

Mr. Furneaux Jordan, writing in the *Observer* a Sunday or two ago, used a word which took my fancy, Xenophobia, or a morose dislike of foreigners. This is a dangerous state of mind which goes with a blind belief in the unequalled virtues of your own country. Its opposite, which finds everything abroad admirable and nothing good at home, is almost as bad.

These last three years I have been abroad again looking at what, as a student, I admired and what is going on now, and I have been thinking about two things: the strange fact that whereas the Americans and Italians, the Swiss and the Danes have a confident native way of designing for themselves and have ideas to export, we turn away from ourselves to copy them, always trying in vain to produce the Bay Region style without timber and the image of Milan without marble; and on the other hand that while they accept without question the fact that they have and use a contemporary underivative way of doing things, we vacillate wildly and even flirt with the idea of "revivals."

I think it is high time we put our house in order and began to give something consistent to the world, and that the people to do it are the architects in practice, by which I mean all of them and not merely a handful who by the rest are regarded as cranks. This would make the way a lot easier for you students but you would still have to do something yourselves, chiefly in the way of acquiring a sound basis of reasoning for what you want to do.

Two Lines of Study

I want to suggest that there are two lines of study which will help. The first, oddly enough, is that of architecture, by which I mean the essence of all that has been and is being built. If you study intelligently the vast exemplar which is history without prejudice and without too much labelling and docketing, there will soak into you a feeling for expression in the medium of structure, which will enable you to give to the handling of your own problems character and meaning. You will learn to think and to invent in building forms rather than in terms of what makes a pretty drawing. The chief study, so someone said, of mankind is man (some wag said woman), and that of the architect should be first and foremost architecture. The second of my studies is the English way of life and how it can be improved without being obliterated or changed into something totally different, the forms of building agreeable to it, the English climate, and the use of readily available materials in ways which make the most of them and suit conditions.

These are the only logical bases for a sound philosophy, and you should be found arguing about them far into the night. I am only too sorry more of you do not live under university conditions of residence; you have too little time for discussion and are far too much preoccupied rushing to school or dashing home, often at the risk of your lives on motor-cycles, which fill your "working" hours besides with irrelevant talk of gears and carburettors.

LMBA

Luncheon to the Lord Mayor

AN LMBA luncheon in honour of the Lord Mayor of London, Sir Rupert De la Bère, was held at the Savoy Hotel, London, on Monday (October 12). Mr. Gerald A. Hill, LMBA president, presided. Welcoming the Lord Mayor, MR. HILL said:—

You have come, my Lord Mayor, because the luncheon of the London Master Builders' Association has come to be an annual event in the life of our first citizen. I believe you had another reason. You hope in the lifetime of the present generation to see your great city rebuilt, and I suspect you wanted to have a look at some of the men who would be entrusted with this great task.

You may not yet have got over all the difficulties in the way of rebuilding our great and beloved city, but as you have the Minister of Works sitting very near you today, I expect you have taken the opportunity of winning him to your cause. We, my Lord Mayor, are ready whenever you are. May we hope that the Minister of Works will very soon be able to assure us of the necessary supplies of materials, for we want to make a really good job of it when we start, a job worthy of the great master craftsmen and builders of the past, three or four of whom, I am glad to say, were called by their fellows to occupy the august position the duties of which you to-day carry out with such distinction.

We have a special reason of our own for being proud and happy to welcome you to our company to-day. I believe we can claim you as one of us, for though your firm is not a full member of the LMBA, you are at least among the many Information Members. It is therefore an extra pleasure to welcome you, if I may so put it, as one who is almost a builder.

The Lord Mayor, ALDERMAN SIR RUPERT DE LA BERE, MP, referring to the delay in the rebuilding of the City of London, asked where the blame for the delay could lie. It could not be laid, he said, at the feet of either the Minister of Works, Sir David Eccles, or the Minister of Housing and Local Government, Mr. Harold Macmillan. Whatever the causes, the City could be rebuilt—and it must be rebuilt, he declared.

Delays in Starting

On the same theme, SIR DAVID ECCLES said he was "ready when you are" to rebuild the City, but where were the architects' drawings? He seemed to remember issuing some licences ten months ago, but how far had they got with the work? The results had made him realise the need for giving the all clear for new building a long way ahead. The Lord Mayor had referred to some event to take place on October 14. He (Sir David Eccles) noted that the Lord Mayor was to dine with the bankers on that date . . . perhaps that was it. Anyhow, he hoped that Sir Rupert would be good enough to advocate that the bankers should rebuild the City in stone.

Turning to the materials situation, Sir David Eccles said that they had started with a real shortage of steel, but now steel-framed buildings were going up fast—60 per cent. faster than last year, in fact. The cement position had also improved and, had it not been for the floods, which not only cut production but resulted in a demand for several hundred thousand tons of cement for coast defence works, the position would have been still better. The outlook for next year was, however, reassuring, especially as the demand for cement for defence works was easing off.

In regard to bricks, Sir David Eccles said we had just scraped through the summer. He had to contend with the fact, however, that 320,000 houses were now under construction, while he had only been asked by his colleague, Mr. Macmillan, to budget for 300,000 a year!

Warning on Costs

Turning to the future, he thought there was a place for the expansion of the building industry next year, but there was only one query—costs. The moment would come, he warned, when if costs went on rising, consumer resistance would be met, which was a point that he hoped they would all keep well in mind.

Referring to unemployment of painters during the winter, the Minister said that the Government had an idea or two to ease the situation, but he nevertheless appealed to all present to try to influence their customers to have some decorating work done in the winter, and so not risk losing good craftsmen from the industry.

This year, he added, the building industry was doing well. Whereas in 1952 the value of work undertaken amounted to £1,600m, this year it was running at the rate of £1,700m or £1,750m, and further expansion was possible, he believed, provided costs could be kept in check.

Among those present at the lucheon were:—

Sir David Eccles, Sir Harold Emmerson, Sir Charles Mole, Sir Thomas Sheepshanks, Sir Harold Webbe, OBE, Sir Frederick Leggett, J. H. Forshaw, FRIBA, W. Horsfall, S. F. S. Hearder, D. E. Woodbine Parish, R. R. Costain, N. Hannen, G. H. A. Hughes, OBE, FRICS, I. J. Hayward, C. H. Walker, CBE, FRIBA, Dr. J. L. Martin, FRIBA, J. H. Mills, P. McNamara, D. C. Mallam, F. Woodcock, H. J. W. Alexander, G. A. Coombe, E. H. Palmer, FRICS, Lt.-Col. R. F. Galbraith, J. F. Beagley, F. W. Beazley, G. Holliday, H. H. Ridge, J. S. Rigden, A. Wright, Ian M. Leslie, HonARIBA (Editor, *The Builder*).

H. F. Carter, J. C. Cox, OBE, W. H. Forsdike, CBE, E. L. Jones, MBE, H. B. Kerr, OBE, C. W. Pool, W. E. Rice, CBE, K. M. Roberts, Dame Evelyn Sharp, DBE, P. Shepheard, ARIBA, P. Smallwood, C. D. Spragg, CBE, Mrs. T. Stanley, R. E. Stenning, S. J. Tatchell, CBE, FRIBA, W. B. Taylor, J. W. Train, MBE, R. S. Williams, D. C. Burgess, E. G. Dean, LRIBA, H. E. Comben, OBE, AMICE, C. H. F. Fairweather, H. J. Falkus, N. S. Farrow, MBE, K. C. F. Foster, Gontran Goulden, ARIBA, L. J. Holloway, W. K. Laing, AMICE.

Building Exhibition Arrangements

THE London Master Builders' Association's "days" at the Building Exhibition next month have now been arranged. The President's reception will be on the afternoon of the opening day, Wednesday, November 18, when Mr. Gerald Hill, with Mrs. Hill, will be "at home" to members of the LMBA and of the National Federation in the LMBA Club Room from 3 p.m. The opening day was selected for the reception in the hope that members of the Regional Federations of the National Federation coming to London for the official opening would be able to attend. The club that day will be "manned" by Mr. Gerald Hill's own area, Central Area No. 5.

Other LMBA Area Days are as follows:—

North-Western Area, Thursday, November 19.

South-Western Area, Friday, November 20.

Central Area No. 3, Monday, November 23.

South-Eastern Area, Tuesday, November 24.

Central Area No. 4, Wednesday, November 25.

Central Area No. 1, Thursday, November 26.

Southern Area, Friday, November 27.

Northern Area, Monday, November 30.

North-Eastern Area, Tuesday, December 1.

Central Area No. 2, Wednesday, December 2.

Productivity Committees for London

THE LMBA is co-operating with the British Productivity Council in the setting up of local committees throughout the London Region. It has now nominated the following members to represent it on these committees:—

Central London, N. S. Farrow.
East London, F. Luker.
West London, W. K. Laing.
North London, D. C. C. Roberts.
South London, D. E. Woodbine Parish.
Kingston, W. G. Soole.
Croydon, G. H. Noyes.
North-West Kent, K. J. Pearce.

Donation to Builders' Foremen

THE LMBA has sent a donation of 20 gns. to the London Association of Builders' Foremen and Clerks of Works. The annual dinner of the Association takes place on November 3 at the Café Royal.

COMPLAINTS ABOUT RICHMOND COUNCIL HOUSES

Mr. Arthur Kenyon's Report

AFTER a public meeting in August of tenants from the Sandy-lane estate, Petersham, Richmond council appointed an independent architect, Mr. Arthur W. Kenyon, CBE, FRIBA, MTPI, to inspect the new houses, nearly 200 in number, about which the tenants had complained.

Mr. Kenyon cites in his report as the contributory causes of the discontent of the tenants, lack of roads and footpaths, causing excessive dust, lack of adequate street lighting and trees, unattractive bricks used for division walls, and the monotony of interior decorations.

Of specific complaints, he said, "Cracked walls—not worse than normal in this type of construction. Cracks to walls—of a superficial nature. Joinery—good. Dampness—no evidence except in cupboards." He admits the unevenness of the floors, which he says "will not be easy to remedy."

Mr. Kenyon concludes that the defects complained of exist, "but that they are of the same standard and nature as the defects lists which are normal for maintenance of this type of work." He recommends the council to take immediate action to complete road works and landscaping, to order the contractor to carry out maintenance work on the houses, and to give further attention to drainage.

He continues: "I have found no trace of negligence by the borough engineer's department, nor have I found any traces of deliberately poor workmanship by the contractor. It is, however, an undoubted fact that all too often these days contractors work to a so-called housing standard which leaves much to be desired." Richmond housing committee have decided to act on Mr. Kenyon's recommendations.

MODERN DEVELOPMENTS OF STRUCTURAL ENGINEERING

Lieut.-Colonel Galbraith's Presidential Address to the Institution of Structural Engineers

IN his presidential address to the Institution of Structural Engineers in London on October 1, LIEUT-COLONEL R. GALBRAITH, BSc (Eng.), AMICE, spoke on the subject of "Modern Developments of Structural Engineering," and we take the following extracts from his remarks.

Lieut-Colonel Galbraith said:

With foundation work the development in site investigation and the theory and practice of soil mechanics during the last few years has enabled structural engineers to depart from the rather empirical rules that defined the safe bearing pressure for various types of soils and to predict with much greater certainty the probable subsoil conditions and to design accordingly.

About fifteen years ago the maximum concession made to site investigation was the excavation of a single trial hole somewhere on the proposed site and if possible where no load-bearing member would be needed. To-day site investigation commences with a study of the geology of the district and an examination of the bore hole results recorded at South Kensington by the Geological Survey of Great Britain. This preliminary work enables the engineer to decide the number and position of trial pits or bore holes. Trial pits tend to become expensive if carried to a depth greater than 10 to 15 feet, but in stiff ground where no timbering is required they permit a visual examination of the various strata. Shallow bore holes can be made in light soil by a post hole auger, whilst bore holes of medium depth are readily made by a shell and auger boring rig, or other type of rig. In the case of deep boring through rock diamond bits are used to obtain cores, driven by machines capable of drilling to a depth of 1,000 ft. Whatever type of drilling is used careful records are kept of each stratum showing depth, soil type, water level, etc.

Samples are taken at various depths and are either disturbed, i.e., taken from the bore hole and packed into airtight containers, or undisturbed, when care is taken to preserve the natural structure of the soil. Special sampling tools are used to obtain undisturbed samples. When boring has been completed the various engineering properties of the samples are tested in the laboratory.

The information obtained from the borings and from laboratory tests of the mechanical properties of the soils enables the engineer to solve his foundation problems in a rational way.

In addition to borings and laboratory tests it is sometimes desirable or necessary to make actual bearing tests on the site.

INTERPRETING RESULTS

The results obtained by these bearing tests need careful interpretation as they only reflect the character of the soil located within a depth of less than twice the width of the test plate, and unless the soil is uniform to a considerable depth, which is most unlikely, the results will be misleading. It is necessary to select an allowable soil pressure not only from the results of such tests, but also from the character of the soil profile and from the size of the foundation itself.

Geophysical methods to determine the depth of bedrock have been developed to assist the engineer. A geophysical survey can quickly give a general picture of the bedrock surface under the whole site enabling the subsequent drilling programme to be planned economically. In dealing with river sites where drilling is more difficult and costly than on dry land, several rock profiles can be obtained across the river by geophysical methods at the cost of a single bore hole. The seismic refractory method and electrical resistivity method are those generally used in these cases. The results obtained by the seismic method are accurate within 10 per cent.

Considerable research continues on the theory of soil mechanics.

The methods used for permanent construction to resist earth pressure have not varied very much in the past decade or so.

The reinforced concrete retaining wall is probably the most common solution to the problem of building work. In 1952, owing to the extreme shortage of steel, prestressed concrete retaining walls were used in some cases.

Before leaving this section I must mention the geotechnical processes which are now in use in suitable cases whereby the properties of the soil can be changed either permanently or temporarily. The most useful processes for building work are the freezing processes used for excavation in fine-grain soils below ground water level, and the injection processes which includes cement grouting, clay grouting and chemical consolidation. The chemical consolidation method has proved most successful and most varied in application. The materials which are suitable for this treatment are deposits of sand or gravel, both above and below ground water level, and containing up to approximately 5 per cent. of impurities. Very fine sands are too fine for injection. Clays, silts and peats are also unsuitable, and other processes such as freezing, explosive consolidation, etc., should be used.

STRUCTURAL THEORY

On structural theory, the speaker said that it is unfortunate that the work of the Steel Structures Research Committee, who published a final report in 1937, has not been integrated into the engineering practice, as the rational methods put forward in the report would undoubtedly lead to economy. Each simplifying step made to meet criticisms of complexity has meant a loss of economy.

When the committee stopped work, experimental work was started in the Civil Engineering Department of the University of Bristol and later at Cambridge. In 1944 Professor J. F. Baker and his team of experts at the Engineering Laboratory of the University of Cambridge developed what is now known as the "plastic theory." This is an outstanding contribution to modern thought and the award of the Institution's Gold Medal to Professor Baker in 1952 for his work on the Steel Structures Research Committee and in connection with the plastic theory pays a fitting tribute to this.

The results obtained by this theory are illustrated in a striking manner in the case of the 60 ft. standard storage shed designed for the War Department by Professor Baker and his team at Cambridge in 1951. The original War Department design uses 4.54 pounds of steel per sq. ft. of floor area, whilst the Cambridge design requires only 3.1 pounds per sq. ft., i.e. a saving of 34 per cent. The table of comparative weights and sizes is worthy of study by all engineers.

Professor A. L. L. Baker has put forward a plastic theory of design for ordinary reinforced concrete and prestressed concrete and for shell roofs. Considerable experimental work in support of this theory has been carried out, and further work is proceeding at Imperial College, University of London.

There has been an increasing use of plastic models to study the deformations of statically indeterminate structures such as portal frames. The results obtained by the use of such methods are comparable to the results obtained by more rigorous analysis.

STRUCTURAL STEELWORK

High tensile steel to B.S.S.548 has been used with economy in a number of buildings carrying heavy floor loads. The initial extra cost of approximately 10 per cent. of the structural steelwork is offset by a saving of perhaps 30 per cent. in the weight due to the increased working stresses permissible.

The case of welded steelwork has been one of rapid development. Perhaps one of the most outstanding applications of welding has been the Bailey Bridge designed by Mr. D. Bailey, now Sir Donald, one of our members. The units are entirely of welded construction.

Before leaving structural steelwork I should like to show a very recent development—prestressed steel. We all know of prestressed concrete, but there has been very little work done on prestressed steel. If the principles are correct for concrete there seems no reason why they should not achieve an economy in steel when applied to structural steelwork. The first published use of prestressed steel was by Professor Magnel in 1950. Mr. R. A. Sefton Jenkins has now designed a 60 ft. span lattice girder for the Harlow Development Corporation which has a prestressed bottom core.

REINFORCED CONCRETE

The progress of reinforced concrete during the last decade has been one of steadily increasing volume due to severe steel shortage with little change in basic design. The recently published report on economy of building materials recommends the use of a higher working stress, i.e. 20,000 lb./sq. in. for m.s. reinforcing bars, but doubts appear in the minds of some engineers as to the justification for this increase, apart from the grounds of economy.

The use of deformed bars, either cold twisted bars or twin bars, has been advocated as a means of saving steel by using higher stresses, and a report on the use of deformed steel bars in reinforced concrete has recently been published by the Institution. This certainly does reduce the total quantity of steel required, but the fact that the increased stress will result in an increased strain with a consequent increase in the total width of cracking must be borne in mind. Special steps must be taken in all structures exposed to the weather to design so that a large number of fine cracks will develop rather than a few large cracks. This can often be obtained by introducing secondary reinforcements near to the surface.

The cracking of concrete may result in very serious damage to the steel reinforcement. In protected situations or where the concrete has an additional protection from

a stone or brick facing, and where there is a low fire risk it may be possible to reduce the cover recommended by the Code of Practice, but in exposed outside situations I feel it is necessary to increase the cover; even 2 in. may not be an unduly large amount.

Considerable attention has been paid in recent years to the actual mix used to obtain concrete of a given quality. It seems desirable that we should specify the minimum strength required at three, seven and 28 days, together with any special water-cement ratio required, and then leave the contractor to adjust the proportions used according to the aggregate, cement and plant available. This would tend to decrease the cost of concrete by not using concrete of a higher strength than is actually required.

Consideration should also be given to the age of concrete when its full working load will be applied. The concrete, say, in a lower length of column may well be nine to 12 months old before it carries its full design dead loading, and even much older before its full live load will be applied. It seems desirable to permit the use of higher working stresses for those parts of a structure which by virtue of their position must be highly matured before they can receive their full design load, care being taken, of course, to avoid accidental loading.

The speaker then outlined the three main systems of prestressing concrete.

PRECAST CONCRETE

Factory-made precast concrete units have several advantages over those cast on the site. The concrete is usually made under very close control from aggregates of known characteristics. The placing and consolidation processes are on well-tried lines, while the constructions of the moulds is carried out by men well versed in this work with proper woodworking and machine shops to support them. Thus the factory-made unit will normally be of very high grade concrete, within the specified tolerances of size, and properly finished and matured. On the other hand there is, of course, the disadvantage of the cost of transport to the site.

During the war many hundreds of Ministry of Works huts were used by the Forces for camps and stores. The concrete members were cast in convenient sections and bolted together in position. Single-storey factory frames, both single and multiple spans have been developed by various manufacturers, parts being held in stock to give speedy delivery.

During the last three or four years multiple-storey buildings have been erected with precast members.

Plashet County Secondary School for Girls, East Ham, has six storeys of precast members, all similar. The portal frames at each end of each wing consist of a pair of precast concrete posts with projecting haunches, with mild-steel reinforcement, connected to a precast prestressed beam. The joints in the vertical posts occur approximately at mid-storey height and are halved and bolted; while the joint between the projecting haunch and the central beam is a mechanical hinge joint. Each portal frame is connected to the adjacent concrete wall and between the two sets of portals precast prestressed window frames are fixed forming the walls of the classrooms. The floors which are hollow prestressed units span between the portal frames. The stairs in the centre of the building are all precast prestressed units of approximately 20 ft. 0in. span. This system of construction allowed very rapid erection on the site; a complete floor including the ancillary *in situ* work was erected in seven working days.

The size of precast members is really only limited by the capacity of the hoisting equipment available at the works, and at the site, and by the means of transport. Very heavy members weighing up to 30 tons have been successfully cast, close to their final position, and hoisted by heavy lifting tackle.

Before leaving precast construction I should mention the precast pile, which is now made in large quantities to a given standard and held in stock by various manufacturers, so that immediate delivery can be given for urgent jobs of well-matured piles. Many precast prestressed piles have also been used recently with success. A 12 in. by 12 in. sq. prestressed pile can be produced and handled up to 55 ft. long.

TUBULAR CONSTRUCTION

The structural use of steel tubes is another development which has been of particular advantage during the steel shortage. Roof trusses, space frames, portal buildings have all been carried out in this form of construction. In May last a Code of Practice (CP 113:201 (1953)) was issued giving recommendations for the design and fabrication and erection of steel tubes. During recent months we have seen an immense amount of temporary construction carried out in steel tubes for work in connection with the Coronation of our Queen, but, perhaps, the most spectacular use of tubes is the W.1400 drag-line installed by Messrs. Stewarts and Lloyds, near Corby, Northamptonshire. This is the biggest machine of its kind in the world. It weighs 1,600 tons and in its working position the head of the jib is 175 ft. above the ground.

ALUMINIUM

Aluminium, or rather the aluminium alloys, have become a very definite structural material. The alloys, bulk for bulk, are about one-third the weight of steel and are from a half to three-quarters the strength of steel. In any structure where the dead weight of construction forms a high proportion of the total load aluminium alloy becomes a competitive material. Small units such as roof trusses for housing where repetition allows the use of mass production methods form another field where the light alloys can hold their own.

Apart from the cost aspect no maintenance is required. Light graceful members can be constructed, and no surface decoration is needed.

[Lieut.-Col. Galbraith's remarks on future developments in structural engineering were given in our last issue.]

POWER STATION INQUIRY REPORT

"Extravagant" Expenditure Alleged

THE committee, set up by the Minister of Fuel and Power in the autumn of 1952 under the chairmanship of Sir Hugh Beaver, MInstCE, MIChemE, to consider in the light of present economic and supply difficulties whether any savings of materials or manpower could be introduced into the planning, designing and construction of power stations, particularly in regard to scarce materials such as steel, timber, bricks and cement, has now reported. (Report of the Committee of Inquiry into Economy in the Construction of Power Stations: HMSO (price 2s.).)

One of the main objectives was to see if economies could be secured so as to minimise interference with the house-building programme. The committee find that the total impact of power station construction on the national building programme is not great; the 1952 programme was estimated to absorb 1 per cent. only of the annual output of bricks, 2 per cent. of the output of cement and 1 per cent. of the building and civil engineering labour. Steel requirements, however, have a somewhat greater incidence on the national output, for in 1952 about 16 per cent. of the available structural and reinforcing steel was needed for power station construction.

The report is devoted mainly to a long-term survey of how economies may be achieved over the next decade. The committee recognised that the British Electricity Authority have made considerable progress in effecting economies in design since vesting date, but they believe that further savings in time, costs, materials and labour are still possible.

The committee recommend that the present statutory procedure for approving power station sites should be reconsidered by the Government Departments concerned, and that the BEA should assist in hastening this procedure by providing a long-term estimate of their future site requirements and their approximate locations.

Suggestions are made for still further reducing the cubic content of power stations in relation to their installed capacity; and in particular it is urged that further consideration be given to the development of "semi-clad" plant (i.e. with boilers and ancillary equipment only partially covered in). Linked with this question is the recommendation that individual stations should in future normally be constructed with an installed capacity of not less than 400,000 kW (which would in turn facilitate the finding of sites). More standardisation of common items of plant and equipment is recommended.

"Cathedral-like" Buildings

The committee feel that past expenditure on civil engineering and building has been unnecessarily extravagant. They recommend further standardisation of design of component sections, and condemn (with the support of the Royal Fine Art Commission) the "cathedral-like" appearance of some power stations; although it is recognised that this criticism arises in connection with stations designed wholly before vesting date.

A further plea is for architects to be integrated as equal partners in the design team of each new power station, and the BEA are urged to encourage the experiment of new building techniques in the interests of economy.

The committee hold that civil engineering and building work is split up into too many separate contracts and recommend that these be simplified even to the extent of experimenting with single complete contracts for single power station projects.

Finally, there is the recommendation that targets for standards of cost, area and space should be set by the BEA, leaving the generating divisions freedom to work within such limits, and delegating to them more of the design work hitherto undertaken at headquarters.

HIGH QUALITY CONCRETE

Part Played by Aggregates in its Production

THE essence of good concreting was control, said MR. D. A. STEWART, MBE, AMICE, AMIEE, when he read a paper on "Aggregate Grading and the Design of Concrete Mixes," at a meeting of the Reinforced Concrete Association on October 7.

To be effective the control must cover the purchase of the aggregates, their grading, delivery and stock-piling, as well as the correct batching of the materials into the mixer. Although much could be said on the subject of mixing and mixers and the control of water content, he said he proposed to concentrate in this paper upon the important part played by aggregates in the production of high-quality concrete. He continued:

Nowadays a large volume of concrete is consolidated by vibration, and it is therefore important that the concrete provided by the mixing plant should be suited to this method. The characteristics of chief importance are that the mix should be appreciably less workable than that usual in hand-placed concretes and that the mortar content should be somewhat lower.

The effect of these two deviations from standard practice is to increase the density of the compacted concrete by virtue of the lower water content dictated by both the reduced workability and the lower sand content required in the mortar. For example, a nominal 1 : 2 : 4 concrete, having an equivalent proportion by weight of 1 : 6.5, would require a water content, expressed as a water/cement ratio, of 0.58 for hand placing; whereas a mix of the same overall proportion by weight, intended for vibration would require a ratio of 0.45. The general effect is to bring about a marked increase in compressive strength. This improved strength is not entirely due to the lower water content of the second concrete but is associated with two other changes, namely the increase in the work done on the concrete in compacting it and the increase in richness of the mortar content. This increase is evident when the proportions of cement to coarse and fine aggregate are compared for typical mixes of the two types.

Proportion by weight

Hand placed	*Vibration placed*
1 : 2.275 : 4.225	1 : 1.76 : 4.74

In order to show that a certain justification exists for the statement made above on the effect of richer mortars, the following experimental results are quoted:

A/c. ratio	*Coarse/fine ratio*	*W/c. ratio*	*7-day strength (psi)*
9:1	68/32	.54	1618
9:1	70/30	.53	2800
9:1	75/25	.53	3391
7.15:1	70/30	.5	3888
7.15:1	75/25	.5	4667
6.5 :1	78/22	.52	2800
6.5 :1	78.5/21.5	.56	3440

The workability of a concrete is frequently improved by increasing the richness of the mortar while maintaining the same overall proportions. Therefore, where vibration is to be employed on a concrete of appropriately low workability, an appreciable reduction can be made in the water content, thus producing a concrete of higher compressive strength and lower shrinkage. From consideration of the above it is desirable, not only to give careful attention to establishing a satisfactory ratio between the coarse and fine aggregate but to maintaining those proportions throughout the job if variations in strength are to be avoided.

Quantity of Sand

It is generally accepted that the quantity of sand in a mix should bear some relationship to the void content of the coarse aggregate; where a mix is to be designed for vibration compaction this relationship becomes somewhat more important than for a hand-placed mix. In principle, this may be explained by the fact that a vibrator affects a much larger volume of concrete at any instant than does a punner or slice, and the particles involved have a better opportunity of adjusting themselves to a denser packing. Usually this increase in density is brought about by the closing up of the coarser elements and the expulsion of the finer. In these circumstances any mortar in excess of requirements at compaction is thrown out and appears at the surface of the lift as an unwanted layer. Evidently the void content of the coarse aggregate must be the subject of examination and control if a uniform concrete is to be manufactured.

At first sight this would appear to be a simple matter of grading, and in fact, provided that the shape of the aggregates remains reasonably constant, a consistent grading will produce an aggregate of uniform bulk density. However, in a continuously graded stone from 1½ in. to 3/16 in. a considerable variation may arise within any size group. For instance, in the ¾ in. to ⅜ in. group, the bulk of the stone might remain on the ½ in. sieve in one delivery and pass it in the next, thus not only changing the size of the individual voids in a cubic foot of stone but also the total voids. This kind of variation can take place in all size groups making up a continuous grading, and therefore, apart from shape variation, the greater the grading range the greater can be the variation in bulk density for a nominally constant grading.

Segregation

In practice, however, a further factor intervenes, this is segregation. Segregation may originate at the pit or quarry in loading the aggregates from two or more hoppers containing single-sized stone, or it may develop in transit and rehandling. In any case, where concrete is made from a so-called continuous grading, there can be no pretence at real control of either void size or the total voids in a cubic foot of stone unless the single-sized materials are purchased separately, binned separately at the site and added in their correct proportions in mix batches to the sand, cement and water in the mixer.

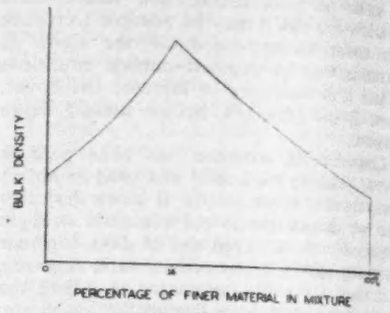
The accompanying curve is typical of the change in bulk density brought about by combining two single-sized aggregates. It will be seen that there are three singular points on the graph [top of next column].

1. The bulk density for 100 per cent. of coarse material.

2. The bulk density for 100 per cent. of fine material.

3. A point of maximum density of the combined materials.

It will be noted that, with two exceptions, lines of constant bulk density cut the curve at two points so that the mixture may be



Effect on bulk density of combining two single-size aggregates.

made having a predominance of either coarse or fine material for a given bulk density. However, the size of the individual voids do not remain constant since they are a function of the mean size of the aggregates forming them. Thus the voids will be large in the area of the predominance of the coarser material and small and more numerous in the area of the predominance of the finer. It is, therefore, evident that a coarser filler may be employed for a given voidage at the coarse end of the graph and a correspondingly lower water content might be expected for a given workability for a concrete made with this material.

It is for the foregoing reasons that wherever possible the use of a single-sized aggregate is recommended, particularly where vibration is the method of placing. Concretes of this type have come to be termed "gap-graded," and so they are, but gap-grading is not an end in itself. It is just a means to obtain improved control of the raw materials of concrete.

Advantages of Gap-grading

Gap-grading does offer other advantages and it allows of a mathematical approach to the design of a mix based upon the packing and other characteristics of the available aggregates. These other advantages are found in the behaviour of the concrete immediately after compaction. The absence of particles of intermediate size allows of a tight mechanical interlock developing in the coarse aggregate, which gives the green concrete considerable rigidity so that the formwork of walls and columns can be removed as soon as the lift is completed. This offers a means of economy in forms and an opportunity of inspecting the work at a time when any faults can be easily and inexpensively corrected. Segregation in transit and placing is less likely to take place in gap-graded concrete because of the ratio of size of the coarse and fine particles in the mix being relatively great. In this connection a simple experiment may be made to show the importance of the finer sand fractions in inhibiting segregation. Set out the various sand fractions from ⅜ in. to BS No. 100 sieve in small heaps and apply the moistened surface of a piece of plate glass, 2 by 2 in., to each heap in turn, cleaning and remoistening the glass plate between each application. It will be found that, as the particle size decreases the number of particles adhering to the moist surface of the glass increases. It will be noted also that the difficulty of shaking off the particles increases as their size diminishes.

An important feature of a gap-graded mix is that the sand should be able to flow into and through the voids in the coarse aggregate when the latter is in the compacted state. It is usual to select a sand somewhat finer at its upper-grading level than that

recommended for reinforced concrete generally. This does not imply that the specific surface of the sand in a gap-graded mix is any greater than that of a "sharp" concreting sand which may well have a tail of up to 5 per cent. passing the No. 100 sieve. Care must be taken to make sure that this so-called "soft" sand recommended for vibration is free from clay and excess silt.

A high-quality gap-graded concrete is easier and cheaper to produce than a concrete of equivalent quality having a continuous grading. For a continuously graded concrete to have a low standard deviation the aggregates must be separately binned in single sizes, each size being weigh-batched into the mixer hopper. Thus for a mix having a maximum aggregate size of 1½ in. a minimum of four bins will be required, three for the coarse and one for the fine aggregate. On the other hand a gap-graded mix of the same maximum size requires only two bins, one for the coarse aggregate and the other for sand. In fact for the same degree of control gap-grading involves less plant and less handling and should, therefore, appeal to the civil engineering contractor.

There is one question which the discussion of gap-grading always raises—what happens to the aggregates that are not used, that is to say, to the ⅜ to ⅞ in. and the ¾ to ⅜ in. in the case of 1½ in. maximum-sized aggregates? The answer is the same as could have been given about 1½ in. to ¾ in. material in the days when "¾ in. down" was fashionable—find an outlet for it. As a matter of interest a large quantity of material below ¼ in. is in demand for small section precast and prestressed work and for road surfacing at certain times of the year. In any case the engineers object is to make a first-rate concrete of low variability and he should not allow thoughts of the possible financial losses on the part of his aggregate supplier to deter him from this objective.

LCC AND SMOKELESS ZONE

Consideration by Committee

THE POSSIBILITY of establishing a smokeless zone in London will be considered by the rivers and drainage committee of London County Council at their next meeting. This was stated at the meeting of the Council on October 6.

MR. E. E. WOODS, chairman of the rivers and drainage committee, said that the council on March 17 asked the Government to set up a committee of scientific and medical experts to inquire into the causes of atmospheric pollution and formation of fog and their effect on health and property. In July the Government announced the appointment of a committee of inquiry under the chairmanship of Sir Hugh Beaver.

"The Council's smoke abatement powers are limited, but the problem is receiving close attention," he went on. "The possibility of establishing a smokeless zone in London will be considered by my committee at their next meeting. Representations have been made by the Council to the Ministry of Fuel and Power on the urgent need for adequate supplies of smokeless fuel to meet potential demands, and the Government departments concerned have been urged to endeavour to minimize the emission of smoke and grit from London power stations."

Road Federation Appointment

Mr. C. D. Morgan, FCIS, has been appointed secretary of the British Road Federation in succession to Mr. A. A. E. Morgan, ACA, who has resigned.

ROAD IMPROVEMENTS

Government Urged to Act

THE British Road Federation is urging the Government to complete those partly-finished road and bridge construction schemes which were stopped owing to the outbreak of the last war and to post-war economy cuts. In a statement just issued, the Federation says:—

More than £4 million of public money is "locked up" in scores of partly-finished road and bridge schemes throughout Britain, some of them derelict stretches which are lying idle instead of serving road users and helping to reduce transport costs.

The outbreak of World War II caused many of these schemes to be stopped; others were discontinued under the national economy drive of 1948. Because of the Government's lack of a realistic road policy, they remain as paper projects in the offices of the Ministry of Transport, and in some cases not even the Ministry's experts know what their future is, since new conditions have arisen in some areas since the war.

What is clear is that if more of the huge amount collected from motor vehicle operators (it runs at the rate of £1 million a day this year) were spent on finishing many of these schemes, trade and industry (and the general public) would benefit beyond all proportion to the expense needed to put them into operation.

As time passes, the cost of completing the schemes will rise, and the chance of moving goods more cheaply and more swiftly will be put off at the expense of our industrial effort. Men and building materials are available, plant is lying idle, and construction methods have progressed so that the job of bringing these wasting projects to life would now take far less time than in pre-war days.

One Ministry list comprises 52 trunk road schemes, each costing over £10,000, on which "substantial expenditure has already been incurred." Another, dealing with classified roads also costing over £10,000 per scheme and partly-built, totals 161 items. While these by-passes, bridges, widenings, reconstructions and roundabouts call for attention, vehicles waste time, petrol, tyres and engine power in traffic bottlenecks, on narrow, dangerous and overcrowded winding roads which long ago became hopelessly inadequate as vital industrial arteries. The Federation has singled out for special mention six schemes which demand immediate action. They are as follows:—

1. Tunnel at Dartford and Purfleet. Here, on each side of the Thames, runs a 15-years-old pilot tunnel, driven before the war as a preliminary to a 33 ft. wide tunnel. If this were completed it would mean a huge saving in motor vehicle operating costs for industries sited in Essex and Kent.

2. Cromwell-road extension. This concerns the route between London Airport and the air terminal at Waterloo. The scheme is to connect Cromwell-road, in Kensington, with the Great West-road at Brentford, a road which would put an end to the daily crawl of vehicles in and out of the capital's central area.

3. Ashford By-Pass. This would cost about £225,000 to finish. Some £142,000 has been spent on it and all the earthworks, bridges and drainage have been completed. It could be taking traffic off the main trunk road to Dover and the Kent coast, and so relieving the congested streets of Ashford.

4. Slough-Maidenhead By-Pass. With £183,000 "locked up" in it, this bypass is that intended to ease congestion in Slough and Maidenhead, and speed traffic to the West from London. Maidenhead Corporation has asked the Ministry of Transport to hurry the construction work because of traffic jams in the town's narrow streets.

5. Great Cambridge-road. This is the three-mile stretch along the Great Cambridge-road, A10, in North London, from the North Circular-road as far as Carterhatch-lane, Enfield.

6. Alconbury Hill. The Ministry of Transport has itself commended this scheme at Alconbury Hill on the Great North-road in Huntingdonshire. Narrow and dangerous for the heavy volume of traffic it carries, it is pinpointed as suitable for experiments by the Road Research Laboratory and for the provision of "several miles of modern trunk road at a point where it is badly needed."

MERGING OF ENGINEER'S AND ARCHITECT'S DEPARTMENTS

Southport Town Council's Decision

SOUTHPORT TOWN COUNCIL has decided by a majority vote to merge the borough engineer's department and the borough architect's and town planning officer's departments. This is a reversal of a decision reached two years ago when the latter department was established.

The finance committee's recommendation was that from January 1 next the two departments be merged into one department under a chief officer possessing engineering and architectural experience, with a deputy on the engineering side and a deputy on the architectural and town planning side.

ALD. SIR HERBERT BARBER, chairman of the finance committee, said the time was ripe for the proposed merger because the borough engineer was due to retire on superannuation and the architectural office had been vacant since April.

For the opposition it was maintained that it would be impossible to get an officer with the qualifications to fill the dual offices.

DELAY ON HOUSING CONTRACTS

Ellesmere Port Complaints

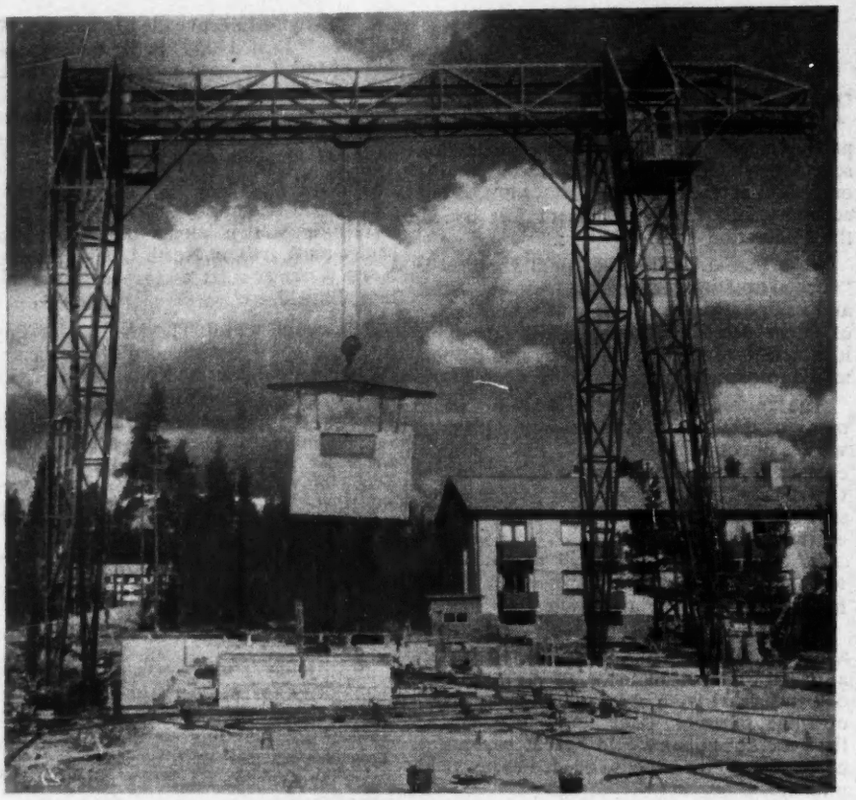
ELLESMERE PORT (Wirral) housing committee is to ask builders to meet them to discuss the situation regarding the progress in connection with certain contracts.

It was stated that housing contracts were being delayed and that houses were not being handed over in accordance with the terms of contracts. In two cases it was said contracts were 12 months overdue.

COUNCILLOR J. GROOME said 657 houses were under construction while the only labour force was 251, which was equivalent to nearly three houses per man.

It was said one complaint was that the builders were short of bricks, but it had been noticed that the same contractors were building houses a few miles away where there appeared to be no shortage.

COUNCILLOR J. DONOGHUE said they were spending the money of the ratepayers to the tune of thousands, but they got no return from the builders, and the Council should take strong measures to get more expedition from the contractors.



In the Sundh process large sections of walls are cast on the site and then put into place with the aid of a gantry crane.

BUILDING METHODS AND MATERIALS AT THE GOTHENBURG FAIR

Sectional Building Rapidly Gaining Ground

[From a Correspondent]

PREFABRICATION and standardisation have made rapid progress in the Swedish building industry in recent years. New methods and materials are being employed on an increasing scale, making it possible to build houses quicker, better and more cheaply. This rationalisation of the building industry is largely the result of extensive research and practical experiments which started from the assumption that the building industry has long been lagging behind in technical development and that there must be ways and means of lowering costs. In carrying on this research private enterprise, Government institutions and local authorities have largely pooled their resources.

A broad and interesting survey of the progress made was given at the International Autumn Fair, held in Gothenburg from September 12 to 20, which included a special exhibition called " Building and Home," with different departments for construction and interior decoration.

Like most countries, Sweden has been confronted with a difficult housing problem for many years. Though escaping war damage, house-building has largely been hampered by economic reasons and partly also by lack of labour. Several other factors have complicated the situation and contributed to stepping up the demand for new dwellings. According to statistics presented by the Swedish Board of Housing at the Gothenburg exhibition it will be a number of years before the housing shortage is overcome, in spite of the present very lively building activity.

Since the end of the war no fewer than 400,000 apartments have been built, providing accommodation for one-and-a-quarter million people, or one fifth of the population. This is more than during any other period of similar length. That it has not sufficed depends chiefly upon the increase of population—10.6 per cent. in the 1940's as against 4 per cent. in the 1920's—the unprecedented influx of people into the cities from the country areas and the fact that young people now marry earlier than previously. A higher economic standard and the general social welfare policy are other factors that have played an important rôle in raising the demand for new and better dwellings. Moreover, the average length of life is longer, and there is practically no emigration, Sweden, on the contrary, now being an immigration country.

The relation between wages and rents has, however, developed favourably. While before the war an industrial worker had to pay about 40 per cent. of his income for a modern two-room-and-kitchen apartment, he now pays less than 20 per cent. The Board also gave an account of the various Swedish Government measures for assisting house-building, chiefly by loans at low interest rates. These measures include considerable investments for raising the general housing standard in rural districts. Nowadays newly built country houses are largely fitted out just as modernly as in the cities, having a bath, central heating, a kitchen with electric stove, refrigerator, stainless sinks, etc.

PREFABRICATION THE KEY

The Swedish Contractors' Association had arranged another interesting display, with a modern scaffolding of light steel tubing—seen all over the Central Hall—as the focal point. Here they demonstrated with graphs and photographic enlargements interesting building schemes recently completed by some of their members. In Avesta, in Central Sweden, as well as in Malmö and other places, several houses have been built according to the Sundh Method. This system, developed by the Swedish building engineer Ernst Sundh, involves the casting of wall and floor sections on the building site, with window and door frames as well as tubing fitted in their places. The large standardised elements are then placed in position by means of a powerful crane and are joined together with cement grout. This method, which is now being tried also in France and some other countries, will be used for 23 blocks with 500 apartments about to be built at Kyrkbyn, in Gothenburg. These blocks will also be provided with prefabricated chimneys, into which will be cast all major elements for heating, plumbing and electricity.

Similar prefabricated buildings carried out by the large contracting firms Skanska Cementgjuteriet and Nya Asfalt AB with factory-cast elements were also shown.

SLIDE-MOULD CASTING

Another method, which in recent years has found extensive use in Sweden for the erection of silos, factory buildings, etc., is the sliding-mould system. A particularly interesting project, described at the Gothenburg exhibition, was the construction recently of the 90-feet-high iron sponge plant at Persberg, in Central Sweden. The contractors, the Siab Company, of Stockholm, here cast 2,000 cu. ft. of concrete in nine days by means of sliding moulds, while a roof structure of steel, weighing 110 tons, was used as a working platform, gradually being raised to the top of the building as the casting proceeded.

The well-known Swedish " Siporex " building material was demonstrated in a special outdoor exhibit. This material is used for all kinds of buildings from small villas to big factories.

Prefabricated timber houses are by now an old Swedish speciality. In this field standardisation has been brought almost to perfection. It would, however, be a complete mistake to believe that all Swedish timber houses look just alike. The standardised elements permit of innumerable variations in size and appearance. The Swedish manufacturers of timber houses deliver almost anything from fairly large hospital buildings to small bungalows and mobile canteens and workers' caravans. The out-door exhibits included several well-equipped units of the latter type as well as summer bungalows, completely equipped and furnished.

ARCHITECTS' IDEAS

Among the exhibits were a variety of cranes, trucks, concrete mixers and other building machinery. A unit attracting special interest among foreign visitors was a lorry for bulk transport of cement in tanks according to the Swedish Interconsult system.

This Gothenburg exhibition also comprised a series of full-scale models of apart-

ments, where Swedish architects presented their latest ideas of how a home should be equipped and furnished in order to be practical and cosy. Suppliers of the hundreds of products that go to equip a modern building, of course, also showed their articles. There was an abundance of laminated doors, full-view windows, washing machines, bathroom equipment, refrigerators, etc. Furniture manufacturers and interior decorators occupied two of the halls, presenting one of the largest and most beautiful displays of modern Swedish interior decoration and industrial art ever staged.

Another feature was a model of the city of Gothenburg's new electricity works at Sävenäs combined with a plant for central district heating of 6,700 apartments by means of exhaust steam.

Other departments, too, at this fair—Gothenburg's first international one—had much of interest to offer the visitor. In all, 775 firms from 20 countries participated. West Germany was represented by 85 exhibitors, Great Britain by 29 and the USA by 17.

KENT FOREMEN'S ANNUAL DINNER

Old Craft Ideals Praised

THE third annual dinner of the Kent Association of Builders' Foremen and Clerks of Works was held at Maidstone on October 3, the principal guests being Mr. H. H. Shears, past-president of the Southern Counties Federation of Building Trades Employers, Mr. S. H. Loweth, FRIBA, Kent County Architect, Mr. R. W. Paine, ARIBA, president of the South-Eastern Society of Architects, and Mr. O'Shea, president of the National Federation of Clerks of Works and Builders' Foremen.

MR. SHEARS, proposing the toast of the Association, spoke of the key positions that general foremen and clerks of works held, and the value of such associations to improve their technique through discussions, visits, and general interchange of ideas. He also urged members to do all within their power to assist in the recruitment of apprentices.

Responding, the president of the Association, MR. A. E. JONES, said that any industry is only as good as the people in it, and it was their aim to carry out the high ideals inspired by the old Craft Guild.

Responding to the toast of the guests, MR. PAINE said that while the industry must not dwell too much in the past, but must look to the future, there was, nevertheless, the need for some young persons to learn to specialise in such work as the restoration of churches for there would soon be nobody left who was able to cope with this type of work.

MR. D. F. WALLIS, replying to the toast of the industry, said that if the industry was to continue to prosper, this could only be done by supplying their particular commodity at the right price consistent with quality. Both of these requirements were, to a great extent, in the hands of the men on the site, who must use their organising ability to increase productivity. In increasing productivity, quality should also be maintained. The quickest way to do any job was invariably the best way. Continuing, Mr. Wallis asked the architects to make sure that their designs were "buildable"; merchants to give accurate dates for delivery of materials; foremen to value the plant on the job, for without good tools improved efficiency was impossible.

HOUSING IN EUROPE

UN Meetings in Geneva

TWO important meetings on European housing problems were held recently in Geneva under the auspices of the United Nations Economic Commission for Europe (ECE).

The first meeting was that of the ECE housing sub-committee's working party on the cost of building, held on October 5 and 6. Experts attending this meeting studied possible measures to reduce the present high cost of building in Europe. Particular attention was given to an examination of trends in the mechanisation of building. Among other items on the agenda of the working party were contract practices in the building industry and model building codes and regulations. Papers on the subject which contain specific proposals for work in these fields have been prepared by the secretariat.

The ECE housing sub-committee itself met from October 7 to 10. Major items on its agenda included a survey of the European housing policies in 1952, the first of a projected series of annual surveys to be undertaken in Europe. Closely related to the sub-committee's examination of this question was its study of European rent policies.

The sub-committee took formal cognisance of the establishment of a non-governmental organisation whose creation it had encouraged, the new International Council for Building Research, Studies and Documentation. In establishing its future programme of work, the sub-committee examined possible activities in the field of town and country planning.

DOCTORS' WAITING-ROOMS

BMA's Suggestions for Improvements

CIRCULAR LETTERS have been posted to the 20,000 general practitioners in the National Health Service inviting them to "review the surgery and waiting-room accommodation in their practices," now that building licensing has been relaxed.

The letters are signed by Dr. A. Talbot Rogers, chairman of the general medical services committee of the British Medical Association, who points out that the condition of the doctor's surgery and waiting-room is of great importance.

"Although in spite of post-war difficulties, the general standard is of a high order," writes Dr. Rogers, "a number of general practitioners have by reason of building restrictions and the high cost of repairs and maintenance, been prevented from doing all they would have wished. . . ."

After remarking that, as a result of the Danckwerts award, general practitioners may now feel themselves to be in a better position to embark upon expenditure, Dr. Rogers says that his committee believe that any necessary improvements in the standard of accommodation should develop spontaneously from a wish by doctors to ensure that their practice premises are compatible with the prestige and status of general practice and will enable them to give of their best to patients.

Liverpool Housing

Liverpool Corporation Housing Committee have proposed to spend £6,238,000 during the year 1953-54 in connection with housing programmes. Schemes at the new estate at Kirkby will absorb over £1m.

BUILDING AT OXFORD

Greater Emphasis on Repair Work

THE ANNUAL report of Oxford University, is this year again largely concerned with problems of administration and finance, but to a lesser degree than of late with the building programme.

On buildings, the report says that the allocation of resources over the past three years indicates that the emphasis is moving from new work to repair work. This is partly due to the policy of the Ministry of Works, which has enabled repair licences, particularly for stonework, to be obtained with comparative ease. The same policy has obtained in regard to work involving the use of skilled woodworkers.

The new physiology building has been taken over, a small extension of the human anatomy building should be finished by the end of the year, and the first stage of the inorganic chemistry laboratory is nearly finished. The University Grants Committee have announced that the second stage, estimated to cost £223,500, will be included in the committee's 1954 programme. All but the last phase of the reconstruction of the North Schools in the Old Bodleian has now been licensed, and 1954 will see the virtual completion of the whole scheme.

DEMOLITION CONTRACTORS

Fifth Annual Convention

THE FIFTH ANNUAL CONVENTION of the National Federation of Demolition Contractors was held on October 2, 3 and 4 at the Cliffs Hotel, Blackpool. The convention opened with a welcome from the North-Western Region Regional chairman to members and their guests, who totalled some 120.

A business meeting occupied a large part of the Friday afternoon, at which many members of the federation discussed the problems affecting the industry as a whole in considerable detail. The meeting was followed by a cocktail party given by the North-Western Region to all members and their guests, and then by a dinner presided over by the president, Mr. A. G. Griffiths. Amongst the guests were Mr. Bennett, from the Ministry of Works, Captain Holbein and a number of other friends of the members of the Federation.

A welcome was extended at the dinner party to all members, their friends and guests by Mr. T. Maiden, the chairman of the North-Western Region, and Mr. Griffiths replied on behalf of the Federation.

Comprehensive Schools

A special issue of *Keystone*, the journal of the Association of Building Technicians, which has just been published, deals with the subject of comprehensive schools. It is addressed not only to architects and others engaged professionally in the design of schools but also to teachers, and further, it is hoped, to parents and all those interested in education. It is illustrated by annotated bird's-eye views of the layouts of seven schools, which are either built or being built at present. These are discussed as seven typical solutions.

BRS Digest

Building Research Station Digest No. 58 which has just been published is on the subject of "Wall and Ceiling Surfaces and Condensation."

DESIGN FOR PRODUCTION

A Productivity Report

THE key to "Design for Production," a Productivity Report published on October 12 is the recommendation: "Producibility should be accepted as a leading factor in design second only to function." The whole Report emphasises the need for considering economy in production when deciding on design. It embodies the findings of a specialist team which visited America in 1952 under the auspices of the Anglo-American Council on Productivity (now British Productivity Council) and the Mutual Security Agency (now Foreign Operations Administration) "to make a study in the engineering and allied industries of how design can be integrated with production to ensure the best utilisation of available materials and standard parts."

Although the team's investigations were limited to the engineering and allied industries, many of its comments and all its recommendations are applicable to industry as a whole. It was interested only in the best practice in the firms visited, which included "some of the most highly developed and successful" in the United States. The team remarks: "Rarely did we notice something good without at least one member of the team quoting an instance of a similar application in Britain. This similarity between the two countries has made our task of selection difficult, but it should make the application of our findings in Britain easy."

The competitive environment, the large markets and the comparative abundance of materials in America have been noted by almost all previous teams. Such an environment conduces to the acceptance of modifications to existing designs since "public opinion (is) conditioned to accept changes and (is) well provided with the financial resources for replacing equipment after a comparatively short life." Although this is true, it does not follow that the form of organisation and the routine of design hammered out in American industry are inapplicable elsewhere; the team believes that there are many lessons to be learned from American experience which can be applied usefully in the less favourable circumstances affecting many British companies.

Recommendations

The principal recommendations of the team are as follows:—

Design policy. The design policy should be clear and should be determined at the top level of management. The design policy when determined should be made known to all members of the organisation concerned in its application. More should be done by managements to explain company policy to the design and production departments at all levels.

Structure of management. As a means of rapidly solving particular problems, the method of setting up "ad hoc" groups of people from different departments should be more widely employed.

Industrial research and design. The appointment of project engineers to supervise the transfer of a new design from research through engineering to production should be considered.

Influence of production on design. Co-ordination between design and manufacturing engineering should begin, at the latest, at the design-draughting stage and should be well sustained right through to production stage.

Production design. More thought should be given to economy in scarce materials and the specification of alternatives by joint design and production engineering study.

Drawing office and engineering staff. Opportunities for more industrial and academic training should be given to methods engineers to equip them for co-ordinating work, but the improvement resulting from this action must not be impaired by permitting any decrease in the qualifications of design engineers.

Copies of the Report, price 3s. 6d., post free, excluding air mail, can be obtained from the British Productivity Council, 21, Tothill-street, London, SW1.

INSURANCE CONTRIBUTIONS

Builders Charged

IN a case heard at Bilston Stipendiary Court on October 5, it was stated that two men, who became partners in a building sub-contractors business employing 18 men, owed £77 18s. 6d. national insurance contributions for themselves and their workmen.

Mr. W. Bayliss, for the Ministry of National Insurance said: "This type of thing is prevalent in the building industry. Men with no resources take on a contract and employ a large number of men, knowing very well the hazards. Insurance is the first thing to suffer."

The accused were Samuel Thompson, of Westfield-road, Bilston, and John Henry Wright, of Parkdale, Tettenhall-road, Wolverhampton. Each was fined £1 for not paying as a self-employed person, and £1 for not paying the contributions of a workman. Wright was ordered to pay £11 17s. 6d. and Thompson £10 3s. 2d. arrears of their own contributions and £27 18s. 11d. each employees' arrears.

Wright told an officer of the Ministry that the business ran into debt because of bad weather, and having to pay men when they were not working put them into difficulties. Both men pleaded guilty and Wright said they had the footings out for 47 pairs of houses when snow came.

The Stipendiary, Mr. Kenneth Wood, said he had some sympathy with defendants, but he hoped they realised they could not go in for that sort of thing unless they had some money behind them to meet the bad weather.

Smoke—The Nation's Enemy

An exhibition on "Smoke and Smog—Causes, Effects, Prevention," opens on November 9, for four weeks, at the Museum of Hygiene of the Royal Sanitary Institute, 90, Buckingham Palace-road, London, SW1. This exhibition will demonstrate how needless smoke is produced; what smoke does, especially when meteorological conditions favour the formation of "smog"; and how smoke can be reduced and the pollution of the atmosphere prevented. The Fuel Research Station, the Meteorological Office, the Building Research Station, and the Ministry of Agriculture and Fisheries; as well as the London County Council, the British Iron and Steel Research Association, the National Smoke Abatement Society, and the Solid Smokeless Fuels Federation, have collaborated in the exhibition which will be open from 10 a.m. to 5 p.m. on Mondays to Fridays and from 10 a.m. to 12 noon on Saturdays.

BRICK SUPPLIES

The Present Position Reviewed

By NIGEL BREEZE

A MEASURE of relief has been noticed recently in regard to supplies of bricks in some areas. Generally, however, a time lag is still involved between ordering and delivery, and the indications suggest that this state of affairs is likely to continue for some time.

Production continues to rise, particularly in the larger organisations, but in some localities the ebb-and-flow of supplies is governed very considerably by seasonal manufacture. Sorting of summer-produced bricks is now about to get into full swing, and in many districts will go on through the major portion of the winter, or until kilns and clamps are clear, whichever is the sooner. Thus some areas are looking forward to a period of greater supplies, but this is likely to be temporary as, after the sorting of such locally produced bricks is complete, those districts will probably be mainly dependent on supplies brought in from the major producing areas, whose output is fairly constant throughout the year.

There seems to be a misunderstanding in the minds of many people, following the Press reports of a "levelling-off" of house building at around 300,000 houses annually. It has been assumed that the adoption of a programme in line with the production of materials formerly in short supply (bricks and cement) would be the solution to all our problems. This is a nice thought, but alas, it is not entirely a logical one. The proposal is quite sound, but it must be appreciated that the implementation of it will take time. If building is carried on at a pace commensurate with the output of bricks and cement, it does not follow that we are making good the back-log automatically. Unless the number of houses started is adjusted to permit "a catching-up," we run the risk of extending the present difficulties, although perhaps in a slightly lesser degree. Care must still be taken in the use of bricks, and any attempt to build outbuildings, garden walls, etc., must be deferred for the moment, or substitutes used.

Journeying round the country talking to producers, factors and users of brick, the stories vary considerably. In some places the delay is six months—in others, treble or half that time, dependent on the type and quantities required. Briefly then, the situation appears to be that seasonal sorting will ease the problem in some areas, temporarily at any rate. Protracted bad weather during the winter which held up building work, could be the means of a build-up of supplies in some works, but this is obviously a measure which cannot be rated as desirable.

A tendency has been noticed among builders to talk rather glibly of increased supplies "overnight." While it is not the intention to appear unduly pessimistic, the fact must be recorded that, despite the superhuman efforts of our brick manufacturers, supplies will be a vexed problem for some little time yet, and it is necessary to issue a cautionary word of exhortation towards continued patience. We are headed in the right direction and despite further possible difficulties and set-backs, there is every indication that in the long run the situation will show signs of improvement provided the rate of building is not increased in the immediate future.

TOWN PLANNING DECISION

Guildford Preservation Order Confirmed: Buildings of Architectural and Historic Interest

SPEAKING at a public inquiry into objections by Messrs. Whitbreads and Messrs. Maynards against the proposal of the Guildford Corporation to make a Preservation Order in respect of Nos. 37 and 38, High-street, Guildford, MR. JOHN LESLIE, Deputy Town Clerk, said the Corporation feared that the appearance of the borough's historic and picturesque High-street would be ruined by the further introduction of modern buildings. No. 38 was an oak-timbered sixteenth-century public-house known as the Bull's Head. "Take away that ancient inn," said Mr. Leslie, "and put in its place any modern building, no matter how well designed, and Guildford will have lost something it can never regain."

The question the Council must ask, continued Mr. Leslie, was how much more would disappear unless active steps were taken to prevent it. So much had already gone that every effort must be made to keep what was left—and that meant every building of the early nineteenth century or before. A building preservation order had been called the first line of defence in the preservation of ancient buildings. It remained to be seen whether it was an effective defence, for even in this century many of the buildings that had charmed our forefathers had disappeared from the High-street. The Red Lion, where Pepys stayed, had been replaced by a chemist's shop and a bank now stood on the site of the Crown Inn, where Dickens stayed, to quote but two examples.

Giving evidence before a Private Bill Committee of the House of Commons on the subject of Guildford High-street and Quarry-street, MR. HUMPHREY BAKER, assistant secretary of the Society for the Prevention of Disfigurement of Ancient Buildings, had said that the High-street contained a large number of extremely interesting buildings of good design, and of all dates, and was an outstanding example of what the chief street of an English country town should be.

It was against that setting, said the DEPUTY TOWN CLERK, that the Corporation wished the matter to be considered.

Further evidence in support of the Corporation was given by Mr. S. G. Livock, FRIBA, past vice-president of the South-eastern Society of Architects and past-chairman of Guildford Chapter of Architects; Mr. David Nye, of the Society for the Preservation of Ancient Buildings; Mr. G. H. Causey, Borough Engineer and Surveyor; and by Mr. H. C. Budden, chairman of the Guildford Society.

Called on behalf of the objectors, MR. AUSTIN BLOMFIELD, FRIBA, said that whilst the overhanging gables followed the original design of the building, and dated from the late sixteenth or early seventeenth century, the elevations were possibly not more than 150 years old.

MR. P. H. BANKS, FRIBA, FRICS, architect to Messrs. Whitbreads, said he could not say when the Bull's Head would collapse, but the building was at present standing up by "accidental adhesion." Repairs would cost £15,000. Asked what he thought was holding the building together, the witness replied that "the grace of God has something to do with it."

The Minister's Decision

In the course of his decision, the Minister of Housing and Local Government, Mr. Macmillan, says he is satisfied that, on the evidence available, the building is not a dangerous structure. He is advised that the building is in very good condition for its age and that it could be put in good order at a comparatively reasonable cost. He is also advised that despite refacing and the insertion of later windows, the building retains much of its early character including its gables and the first-floor oriel window in No. 38.

Guildford High-street, continues the Minister, contains a large number of buildings of architectural and historic interest and the preservation of the interesting character of this well-known street is, in his opinion, a matter of importance. Nos. 37 and 38 form an integral part of a group of buildings which includes the Guildhall and contributes much to the architectural character of this part of the High-street.

The Minister has therefore decided to confirm the Order, subject to certain modifications in matters of detail.

NEWS IN BRIEF

Engineer's Appointment

Mr. Derek T. Bradshaw, former chief assistant engineer in Bootle (Lancs) borough engineer's department, has been appointed borough engineer and surveyor at a salary of £1,350, rising to £1,600.

City's Housing

Authority to demolish 172 buildings in a two-acre area in the centre of the city was given recently by Liverpool Corporation at a public inquiry. It was proposed to replace the old property with 105 flats and maisonettes.

Evening Lectures

A series of free evening lectures, illustrated with lantern slides, has been arranged by the Victoria and Albert Museum authorities. They will be given at the Museum every Wednesday evening at 6.15 pm until December 16.

Development Plans

The Minister of Housing and Local Government has approved with modifications the development plans for West Sussex (Northern Section) and for Canterbury CB. The plans, as approved, will be deposited in the offices of the councils, at Chichester and Canterbury respectively, for inspection by the public.

Course on Timber

A course of study on timber, which has been devised with the object of giving architects, engineers and quantity surveyors an opportunity of obtaining practical help in timber problems which are likely to arrive in the future, has been arranged by the King's College Departments of Civil Engineering and Extra-Mural Studies, University of Durham. They will be held at King's College, Newcastle, from November 9 to 12.

Law for Builders

Mr. A. J. Polland, ACA, Barrister-at-Law, is giving a special course of 12 lectures on building contracts at the Hammersmith School of Building and Arts and Crafts, Lime Grove, Shepherd's Bush, W12, on Tuesday evenings, beginning on October 20, from 7 to 8.30 pm. The course is intended for building contractors, their managers and agents, and for senior students of building. Further details may be obtained from the secretary of the school.

Builders' Year Book

The Eastern Counties Region of the Federation of Master Builders has issued a revised year book for 1953-4, which contains a great deal of information useful to builders.

British Standard

British Standard 1262, "Tins for Paints and Varnishes," price 2s. 6d., has recently been issued by the British Standards Institution, 2, Park-street, W1.

Employment Figures

According to the latest employment figures issued by the Ministry of Labour and National Service, employment in building and contracting increased by 12,000 during August.

Information Bureau

A British Colour Council Information Bureau will be held in Manchester from October 27 to 30 inclusive at King's House, King-street West, headquarters of the Wall Paper Manufacturers, Ltd. Its object is to indicate to industry the various services of the Council. On October 27 a lecture, "Colour To-day," will be given by Mr. R. F. Wilson, art director of the Council. Further details can be obtained from the Secretary at 13, Portman-square, W1.

Factory Removal

British Railways (Southern Region) are undertaking on behalf of Messrs. W. Edwards and Co. (London), Ltd., the removal of the firm's entire factory from Worsley Bridge-road, Lower Sydenham, to the new factory estate, Manor Royal, Crawley. In view of the short distance involved and the intensive electrified rail service in the Southern Region suburban area, British Railways are carrying out the removal by their direct road transport service with a fleet of articulated tractors and trailers.

Revised Decision on Improvement Grants

Property owners in Holderness, E. Yorks, who wish to improve their homes may now apply for an improvement grant to the Holderness RDC. Although the relevant Act has been in existence for some time, in 1949 the Council decided not to put it into operation in their area. Now they have decided, however, to rescind this decision, maintaining that people in the area were not getting the full benefit of the 1949 Housing Act. Good progress has been made with housing in the area, but more can be made, the council now thinks, if they ask people to apply for grants.

Sheldon's New Fire Station

Work will begin early next year on the building of a new permanent divisional fire headquarters in Garretts Green-lane, Sheldon, to give complete fire cover to Birmingham's new municipal housing estate on the east side of the city. The building will be the first permanent fire station to be built in the city since the war and the first of 10 to be built under a long-term scheme for re-planning the whole fire cover of the city. Plans for the new station, designed in the office of the City Architect, Mr. A. G. Sheppard Fidler, FRIBA, have been approved by the Fire Brigade Committee. The station is sited strategically to cover the eastern portion of the city, including Yardley, Stechford and Sheldon and among the large new municipal estates which will be protected from this centre will be Tile Cross, Shard End and Garretts Green.

Year Book

Their Year Book and List of Members for 1953 has been issued by the Institution of Structural Engineers, 11, Upper Belgrave-street, SW1. Copies are available to non-members, price 5s.

Crawley Strike Ended

The strike at Crawley New Town ended on October 7 after a meeting on the building site where 200 bricklayers stopped work on October 5. They returned pending negotiations between their employers and union officials over wage rates.

Design of Police Houses

Tenterden, Kent, Borough Council decided to ask the Kent County Council to plan a police house more in keeping with the ancient town of Tenterden after the plans already submitted had been severely criticised. Hitherto the County Council have built police houses to a standard design.

National Savings

In a message to Lord Mackintosh, chairman of the National Savings Committee, in support of a drive this winter to increase savings in industry, Mr. R. A. Butler, MP, Chancellor of the Exchequer, appealed to all employers and trade union leaders to do their utmost to help. In doing this, he knew he was supported by the leaders of both sides of Parliament. There should be no doubt in anyone's mind that success in the enterprise would be greatly to the advantage both of the individuals concerned and the country, too.

Maintenance Economies

Ways in which economies contributed to "the satisfactory position" of Wolverhampton's building account during 1952-53 are outlined by the housing manager, Mr. R. J. Cowley, in his annual report to the Town Council. The surplus on the year's working was £20,000, compared with £16,000 the previous year. Over 30,000 items of maintenance and repair were carried out and more work was done during the year but fewer workmen employed than in any of the last five years. Co-operation with the building works department in providing schedules of work and carrying out final examinations had enabled a saving of about £3 per house on complete internal redecoration, and £1 per house on external painting. Introduction of a half house internal redecoration scheme saved a considerable amount of furniture removing by the painters.

Competition in House Building

At a meeting of the Ashford, Kent, Urban District Council, during a discussion on a proposal to build 48 Easiform houses at the Aylesford Green estate for £57,193, Councillor H. L. Gibbs criticised the Council's policy of not going out to tender. It was pointed out that this policy only applied to non-traditional houses, but Councillor Gibbs insisted that there should be competition. He realised that they could not get competitive tenders for Easiform houses, but said that they could use alternative non-traditional types of houses. He felt that the Council were more concerned about keeping the same contractors, so that they did not lose any labour force or plant, than they were about the cost of housing. He said that the town's housing debt was more than £66 per head of population, which was a compelling reason why they should get building under a tighter costing rein.

TRADE NEWS

Price Reduction

Schaverien Sheet Metal and Engineering Co., Ltd. (Smeco Products), announce that they have now reduced the prices of their rainwater goods due to new methods of production. Price lists and full details will be forwarded on application. They also announce that they have now re-opened their special department and can undertake the manufacture of goods to customers' own specification.

Making Cement

A film, which should prove to be of particular interest to building, engineering and architectural students and concrete users, has recently been made for the Blue Circle Group of Companies. Explaining how the raw materials used for the manufacture of Portland Cement—chalk, limestone and clay—are obtained, the film follows through the various processes; mixing the limestone and clay, or chalk and clay, with water into cement slurry, storing and testing the slurry, and feeding the slurry into the huge rotary kilns where drying, decarbonating and calcining take place transforming the slurry into cement "clinker" at temperatures around 2,500 degrees F. The red hot clinker is seen passing into coolers, and afterwards to clinker stores from where it is conveyed to the mills (at which stage a small proportion of gypsum is added) and ground to become Portland cement. It is then conveyed to storage silos from where it is loaded into bulk delivery vehicles or fed to the packing plant. Throughout the film attention is focused on the innumerable tests which are carried out during the manufacturing processes and on the finished product. The film, which is a 16m. sound production in colour, will be loaned, free of charge, to interested borrowers on application to Publicity Department, The Cement Marketing Co., Ltd., Portland House, Tothill-st., London, SW1.

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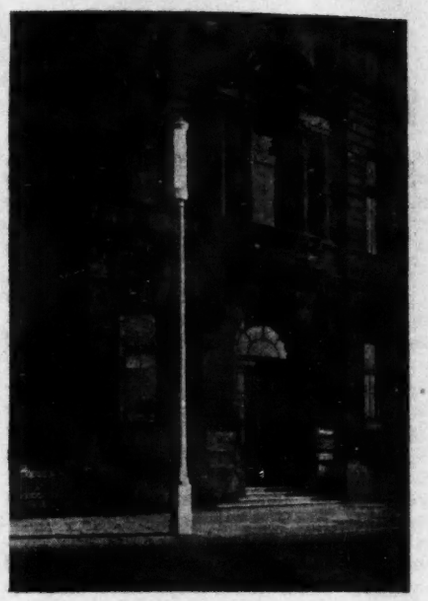

A decorative cold cathode fluorescent lantern designed and built by the General Electric Co., Ltd., for Liverpool Pier Head, seen against the background of the Royal Liver Building. It is one of the first sections of a cold cathode fluorescent lighting scheme which was switched on for the first time at the beginning of September. The scheme is believed to be the first streetlighting installation in the world to employ vertical cold cathode fluorescent lighting.

"Birdseye" Marbles

By the reopening of Steeplehouse Quarry, near Matlock, Derbyshire, closed 12 years ago, Birdseye grey and Fossil marbles are again available. The Hopton-Wood stone Firms, Ltd., announce that they already have adequate stocks for substantial contracts.

New Prestressing System

With reference to the new Gifford-Udall-CCL prestressing system which was described in our issue of October 2, the Ductube Co., Ltd., Regent House, 235-241, Regent-street, London, W1, have informed us that they are responsible for the marketing of the system in overseas countries.

Contemporary Fireplaces

A small but well presented collection of contemporary fireplaces is at present on display in the showrooms of W. N. Froy and Sons, Ltd., at 64, King-street, Hammersmith, W6. In all, there are seven different schemes in which the company have presented some of their new fireplace designs in special settings, created by Heal and Son, together with Heal's furniture, reflecting the present-day mood in home decor. The collection includes schemes for the nursery, living-room, dining-room, bedroom, parlour, and for the teenager's room, all of which have been created to capture the imagination and to be of help to those planning a home.

PERSONAL COLUMN

Messrs. C. A. S. (Contractors), Ltd., Provincial House, 98-106, Cannon-st., EC4, announce that Mr. D. T. Downer has left the company's employment. The deputy managing director, Mr. J. F. C. McRobb, has appointed Mr. D. E. Smith to act as his personal assistant, the appointment being effective from October 26. Orders for materials will in future be signed by Mr. H. J. Hickson, material controller, Mr. S. K. Hardy, commercial manager, Mr. D. E. Smith, personal assistant to deputy managing director, and Mr. J. F. C. McRobb, deputy managing director.

OVERSEAS BUILDING

[From Our Own Correspondents]

Australia.—Nearly £3m. is to be spent by the Australian Commonwealth Government for urgently necessary extensions to tuberculosis hospitals. Speaking in the House of Representatives Mr. H. G. Pearce, Liberal, Queensland, said that projects covered by the £3m. included a 40-bed tuberculosis annexe, together with a pathological laboratory and nurses' accommodation at the Base Hospital, Cairns; a 40-bed tuberculosis annexe together with pathological laboratory and nurses' accommodation at Townsville, a similar 40-bed annexe at Toowoomba, a 48-bed annexe at Rockhampton, a 40-bed annexe at Cherbourg Hospital for natives and 380-bed chest hospital at Chermside, together with nurses' home, boiler house, laundry, and administrative block.

Colombia.—The Aluminium Import Company of the US and Canada is considering the erection of a factory at Cali in the Republic of Colombia to produce aluminium products. Cali is at present inadequately supplied with power and a final decision is said to depend on whether the necessary power supplies can be found.

A new tyre factory is to be built in the same town with the backing of Croydon de Pacifico SA (the Republic's principal rubber manufacturer) and the US Rubber Company. It is understood that a 700 kw generating plant will be built to provide power for the factory.

The Swedish firm Ericsson's has gained a contract for supplying Bogota, the capital, with an additional 1,200 automatic telephone lines.

It is rumoured that television stations will soon be built at Bogota, Medellin, Cali and Barranquilla. The Government has made it clear that TV must be imported, operated and financed by private enterprise. In view of this it would be advisable for contractors to approach enterprises in Colombia who are interested in the future of TV for their country. The names of these firms should be obtainable from the Legation in London.

Malaya.—A recent meeting of the State Council of Brunhei, Malaya, has sanctioned an ambitious five-year plan costing about 100 million Malayan dollars. The more important purposes of the plan are for the extension of social and medical services and of education, improvements of agriculture, and in water and electricity supplies. Irrigation dams are to be erected at Kilanas and Lumapas and sites for other irrigation projects are to be sought out and surveyed. A new automatic telephone exchange is to be installed in the territory together with a radio-telephone system connecting all main towns and kampongs. The runway at the Brunei Town aerodrome is to be ready in 1954 for light traffic. After this, terminal buildings and hotels are to be built.

Town plans to provide for the orderly and well-planned growth of the towns of Brunei, Kuala Belait and Serai will be prepared and where necessary land will be acquired for the purpose and concrete surface drains constructed.

Some 30 new schools are to be built and many existing schools are to be extended. A new Government hospital is to be built at Kuala Belait to cater for the needs of the general public in that area.

Improved domestic water supplies will be provided for Brunei Town and Kuala Belait and new installations are to be made in the larger kampongs. The electricity supplies to the aforementioned towns are to be improved and new supplies are to be provided at Bangar and other large centres of habitation.

Portuguese East Africa.—A Portuguese East African firm called Buccellato is building a foundry which will be the largest in all Portuguese overseas territories. The building is being erected on the coast road running south of Lourenço Marques and is being so constructed as to allow for expansion, if necessary, at a later date. The firm is also based in Lourenço Marques.

Work is also going ahead on a new runway at the airport which will be 2,000 metres long. Expenditure of £50,000 has been approved for levelling and asphalting a part of the road between Lourenço Marques and Manhica. The Director of Public Works of the Government of Mozambique has also submitted to the Governor-General for his approval a plan for road construction throughout the Province. It envisages the construction of some 3,300 miles of permanent highway as well as the necessary bridges. It is budgeted to cost some £8m. and will cover a period of nine years.

The urbanisation plan of Nacala has now been finalised and the future town is to be built in the highlands to the east of the port, an area which is to-day covered entirely by cashew trees. The development of Nacala, which is already linked by road and rail with Lumbo, the mainland port for the island city of Mozambique and via Nampula with the hinterland of the agriculturally rich province of Niassa, is included in the Six-Year Development Plan. An hotel is also being built in the new town to house visitors.

**Sudan.*—Construction work is about to begin on a new 30,000 feddan pump irrigation scheme at Guneid on the east bank of the Nile north of Rufaa in the Blue Nile Province. The soheme will cost more than £E.1m. . . . A plot of land adjacent to Khartoum Airport has been acquired by a Sudanese firm for the construction of an hotel which, it is reported, will be completed, with gardens and car park, within two years. Inquiries about these schemes should be made to Commercial Relations and Exports Department, Board of Trade, Horse Guards-ave., London, SW1. Tel.: Trafalgar 8855, extension 2509.

* From the Board of Trade Special Register Information Service.

Thailand.—The Thailand Government is reported to have approved a scheme costing about £¼m. for the setting up of a national printing press for printing Government publications. It is estimated by local architects that the task will take about five years to complete. No designs have as yet been submitted for approval. There are also plans in hand for the erection of a £100,000 pilot oil refinery in the north to facilitate the marketing of the vast oil resources in that area.

The Thai Department of Fisheries intends to set up a cold storage plant in Bangkok costing over £1m. and other smaller plants costing about £50,000 each in various provinces. It is being hinted that Japanese experts are to supervise the erection of these plants under an arrangement for paying off her war debts.

UK Exports to Uganda

Over £100,000 worth of steel windows and doors were imported by Uganda from Britain in 1952. Uganda's trade last year set up a new record. Exports exceeded £47m. Imports totalled over £24¼m., of which £13m. came from Britain.

"Self-Help" in Australia

Three hundred British migrants watched the official opening in a Melbourne suburb on October 4 of Australia's first British migrants co-operative housing venture. The ceremony was performed by the Minister for Immigration, Mr. Holt, who complimented the migrants on their perseverance and determination to overcome difficulties and establish themselves in their new homeland. All migrants in the scheme have contributed no less than 1,000 hours of voluntary labour as part payment for their own house, which costs them about £A1,800, which is approximately half the market cost.

Housing Portfolio Established

The New Zealand Minister of Mines, Labour and Immigration, the Hon. W. Sullivan, has been given an additional portfolio: that of Minister of Housing. He will be responsible for the Government's general housing policy, covering both State and private building. No separate department will be created, but the various government housing activities will be co-ordinated under his direction. Speaking in Parliament, Mr. Sullivan gave an outline of policy. He said the Government would concentrate on building about 2,500 State houses a year, and rely on private builders to provide the rest of the housing needed to catch up with the present demand and provide for future needs. He also repeated the proposals in the budget for increasing and extending housing loans through the State Advances Corporation and the Government's intention to encourage group housing schemes.

Housing Loans in New Zealand

The newly appointed Minister of Housing in New Zealand, the Hon. W. Sullivan, has announced two Government decisions designed to reduce weekly interest payments on housing loans by the State Advance Corporation. The first allows for an adjustment of the period of a loan to 34 or 40 years, and the second, for a 20-year loan to be granted on the same terms as one for a longer period, and to be taken up again after the 20 years have elapsed. The Government has also given instructions for the setting up of a building research organisation, as recommended by the national housing conference.

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THE SCOTTISH BUILDER

Warning to Contractors

SUTHERLAND County Council has warned local builders who had got into arrears with their work that unless their progress was speeded up housing contracts might be taken from them.

MR. G. J. GRANT, convener, emphasised that the longer the houses took to build the more revenue in the way of rent the council were losing, and they were already faced with a serious housing account deficit. The council wanted the local contractors to get all the work they could undertake, but at the moment they had not the staff to cope with the work in hand.

House Tenders Exceeded

INCREASES in the final cost of finished housing schemes in Lanarkshire ranging from £264 to £11,149 as compared with the tenders accepted, were reported on October 7 at a meeting in Glasgow of Lanark County Council. The only substantial decrease reported was one of £802 for work carried out by the housing direct labour department at Burnwood Camp, Carluke.

For one housing scheme of 20 houses at Auldhouse and Chapelton the county council were told the accepted offer of a Glasgow contractor was £31,160. The final measurement has produced a total of £38,593—an increase of £7,433.

In another part of the county the successful tender for the same number and type of house was £29,640. The final cost was £8,268 more.

The decrease of £802 was shown at Burnwood Camp, Carluke, where the final cost was £6,252 compared with a successful tender of £7,055.

Increased costs of labour and materials were the reasons for the increases.

Burgh Appointment

MR. ALISTAIR MACDONALD, burgh surveyor and sanitary inspector, Stornoway, has been appointed to a similar post in Macduff. A native of Stornoway, he was for some time assistant surveyor in Stranraer.

Housing Figures

DURING the past month 33 houses have been completed in Inverness-shire, bringing the total finished since the war to 1,313. A further 342 houses are at present under construction, and it is hoped to finish about 100 of these before the end of the year.

NEW BUILDINGS

Aberdeen.—Corporation to erect a £29,000 extension to the Old Folks' Home at Polmuir-rd. The architect is Alexander B. Gardner (A), Housing Offices, Broad-st.. The Castlegate, Aberdeen.

Ayr.—Plans in hand for the Scottish Special Housing Association, Ltd., for 100 houses at Forehill-rd. The architect is J. Austin Bent (A), 15-19, Palmerston-pl., Edinburgh.

Clackmannan.—Plans prepared for 25 blocks of houses to be erected at an est. cost of £67,500, at the Fairbairn housing site, Alloa, by Blackburn (Dumbarton), Ltd., Dumbarton.

Dumfries.—Corporation to erect at Lincluden 12 houses, and 12 at Sommerville housing estate. The architect is the Master of Works, Municipal-bldgs., Dumfries.

Edinburgh.—Warrants have been granted in the Dean of Guild Court for two new primary schools in the city. Each will cost £100,000. They are to be erected at Colinton Mains-dr. and at the Inch Area "C" Gilmerton-rd.

Edinburgh.—Plans prepared for scheme of shops and houses which are to be erected at an est. cost of £25,000, at Silverknowe-rd., by MacTaggart & Mickle, Ltd., Glasgow.

Edinburgh.—Plans prepared for scheme of houses and garages to be erected at an est. cost of £76,000 at Barntons Southfield Farm site, by Prior Park (Self Builders) House Society, Ltd., Edinburgh.

Edinburgh.—From plans in the hands of their architects, an extension, est. to cost £95,000, is to be carried out at their bottling store at Holyrood-rd., by William Younger & Co., Ltd., Abbey and Holyrood Breweries, Edinburgh.

Glasgow.—Plans prepared for the Cowlairs Co-operative Society, Ltd., for new buildings to be erected at Balmore-rd., Possilpark. The architects are the Scottish Co-operative Wholesale Society, Ltd. (Architectural Department), 119, Paisley-rd., Kinning Park, Glasgow.

Glasgow.—Plans to be prepared for the Central Drawing Office Co., Ltd., for alterations and additions at McPhater-st., for which the architect is A. S. Robertson, 131, Wilton-st., Maryhill-rd., Glasgow.

Glasgow.—Erection of new furniture warehouse at 76-82, Westmuir-st., Parkhead, from plans by their architects, by the Glasgow Eastern Co-operative Society, Ltd., Parkhead Glasgow.

Glasgow.—Plans in hand for extensions and alterations to the Wholesale Bakery buildings of Bilsland Bros., for which the architects are Wylie, Shanks & Wylie (F&A), 204, West Regent-st., Glasgow.

Glasgow.—Plans prepared for new buildings for the Sunshine Bakery, for which the architects are Frank Burnet, Boston and Bell (F&A), 180, Hope-st., Glasgow.

Greenock.—Dean of Guild Court have approved a plan of John Walker & Co. (Sugar Refiners), Ltd., for the modernisation and reconstruction of their refinery premises in Princes-st. at an est. cost of £300,000.

Greenock.—Alterations and additions to Princes-st. offices, est. to cost £23,000, for which plans have been prepared by the architectural staff of John Hastie & Co., Ltd., Kilblain-st., Greenock.

Inverness-shire.—CC to erect, at an est. cost of £11,650, four houses at Uig housing site, Isle of Skye. Alexander Cullen (F), architect, County-bldgs., Inverness.

Inverness.—Plans prepared for the Scottish Special Housing Association, Ltd., for 52 houses to be erected at the Dalneigh and Hilton housing areas, at an est. cost of £114,000. The architect is J. Austin Bent (A), 15-19, Palmerston-pl., Edinburgh.

Lanarkshire.—Plans in hand for 200 houses for the Scottish Special Housing Association, Ltd., which will be erected at the Cairnhill site. The architect is J. Austin Bent (A), 15-19, Palmerston-pl., Edinburgh.

Lanarkshire.—Plans in hand for new buildings to be erected for Messrs. Woolworth at Shettleston, for which the architects are their own staff at Water-st., Liverpool.

Peterhead.—Plans in hand for a proposed extension at Station-rd. to the Academy. The architect is E. L. Williamson (F), 14, Golden-sq., off Union-st., Aberdeen.

Uddingston.—Plans to be prepared for new petrol-storage tanks for Dunn, Ltd. The architects are Cullen, Lochhead and Brown (F&F), 119, Cadzow-st., Hamilton West.

ACCOUNTING & COSTING SYSTEMS FOR SMALL & MEDIUM-SIZED BUILDERS

Prepared by:

The National Federation of Building Trades Employers
London, W.1

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NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

Humber Construction Co., Ltd. (523565.) Regd. September 12, structural engrs. Nom. cap.: £2,000. Dirs.: F. J. Scrutton & Muriel Scrutton, 116, Lambert-st., Hull.

Marshall, Davis & Co., Ltd. (523569.) Regd. September 12, 14, John Dalton-st., Manchester, 2, flooring mnfrs. and contractors, etc. Nom. cap.: £10,000. Dirs.: J. H. D. Marshall and Constance F. Marshall, 152, Rosemary Hill-rd., Streetly, Sutton Coldfield.

Pendeford Construction Co., Ltd. (523572.) Regd. September 12, 1, Alexandra-st., Wolverhampton, mnfrs. of prefabricated houses and bldgs. etc. Nom. cap.: £1,000. Dirs.: J. P. Shorthouse and Beryl Shorthouse, Thursday's Acre, Himley-la., Swindon, Wimbourn.

Pendeford Sanitary Products, Ltd. (523573.) Regd. September 12, 1, Alexandra-st., Wolverhampton, mnfrs. of sanitary and toilet fittings, etc. Nom. cap.: £1,000. Dirs.: J. P. Shorthouse and Beryl Shorthouse, Thursday's Acre, Himley-la., Swindon, Wimbourn.

S. Brown & Son (Builders), Ltd. (523578.) Regd. September 12, Williams Deacons Bank-chbrs, Cleveleys, Blackpool. Nom. cap.: £100. Dir.: S. Brown, 16, Manor-dr., Cleveleys, Blackpool.

W. Eckersley (Swinton), Ltd. (523584.) Regd. September 12, 2, Bagot-st., Manchester-rd., Wardley, Swinton, Lancs., joiners, carpenters, marquetry mnfrs., etc. Nom. cap.: £2,000. Dirs.: W. Eckersley, Mrs. D. Eckersley and J. Eckersley, all of 14, West Central-dr., Swinton, Lancs.

Stanley Hayman, Ltd. (523590.) Regd. September 12, Guest-st., Leigh, Lancs., bldg. and genl. contractors, etc. Nom. cap.: £5,000. Dirs.: S. Hayman and Mrs. M. H. Hayman, 2, Beech-dr., Leigh, Lancs.

Burgess Precast Concrete, Ltd. (523597.) Regd. September 14, 21, New-rd., Brentwood. Nom. cap.: £1,000. Dir.: C. L. Burgess, 8, Church-rd., Mountnessing.

Wilson and Butler, Ltd. (523617.) Regd. September 14, 15, Seething-la., EC3, joiners, carpenters, marquetry mnfrs., wood carvers, etc. Nom. cap.: £1,000. Dir.: H. E. Butler, 20, Walton-rd., Thorpe Bay, Essex.

Guerin, Ltd. (523602.) Regd. September 14, Burleyhse., 5/11, Theobalds-rd., WC1, bldrs. and contractors, etc. Nom. cap.: £10,000. Dir.: J. S. Heagerty, Copley Dene, Walton-on-the-Hill, Tadworth, Surrey.

Morris & Smiles, Ltd. (523606.) Regd. September 14, 148, High-st. West, Wallsend-on-Tyne, elec. engrs. and genl. elec. installation contractors, etc. Nom. cap.: £150. Dir.: D. J. Morris, 172, Richardson-st., Wallsend-on-Tyne.

S. Paterson, Ltd. (523641.) Regd. September 15, bldrs., etc. Nom. cap.: £500. Dirs.: S. A. Paterson and Maud E. Paterson, 19, Hereford-ave., E. Barnet, Herts.

E. A. Boswell & Son, Ltd. (523650.) Regd. September 16, 34, Cardiff-rd., Llandaff, Glam., bldrs. and contractors, etc. Nom. cap.: £100. Dir.: E. A. Boswell, 116, The-ave., Llandaff.

E. Norman, Ltd. (523652.) Regd. September 16, 51, Lincoln-rd., North Hykeham, Lincoln, bldr. Nom. cap.: £10,000. Dir.: Emma Norman, 177, Lincoln-rd., North Hykeham, Lincoln.

Plumbing Repairs and Maintenance, Ltd. (523663.) Regd. September 16, 92, Tymawr-rd., Llandaff North, Cardiff. Nom. cap.: £1,000. Dir.: W. Roberts, 7, Ashgrove, Whitchurch, Glam.

A. Howlett & Co., Ltd. (523674.) Regd. September 17, 7, Barandon-st., W11, bldr. and decorator. Nom. cap.: £1,000. Dirs.: A. Howlett and Mrs. R. Howlett, 78, Grove-ave., Hanwell, W7.

Arthur Howard (Builders), Ltd. (523675.) Regd. September 17, 393, High-rd., Leyton, E10. Nom. cap.: £1,000. Dirs.: W. C. F. Howard and Mrs. E. Howard, 19, Leasway, Upminster, Essex.

Ogilvie and Gardner, Ltd. (523713.) Regd. September 17, Gladonian Works, Wisk. Littlehampton, Sussex, bldrs., etc. Nom. cap.: £10,000. Dirs.: P. L. Gardner and Louisa J. Gardner, 2, Jubilee-ave., Rustington, Sussex.

R. Townend (Bradford), Ltd. (523720.) Regd. September 17, 19, Croft-st., Bradford, heating, ventilating and general engrs., etc. Nom. cap.: £5,000. Dir.: J. E. Townend, 20, Moorhead-ter., Shipley.

G. H. Davey & Son, Ltd. (523767.) Regd. September 18, 13, Pine View-rd., Torquay, bldrs., etc. Nom. cap.: £2,000. Sub.: G. H. Davey, 58, Ellacombe, Church-rd . Ellacombe, Torquay.

Albert Batten & Sons, Ltd. (523769.) Regd. September 19, bldrs. and contractors. Nom. cap.: £4,000. Dirs.: H. A. Batten and Mrs. V. O. Batten, Corner, Chelwood, nr. Bristol.

T. V. Denton & Co. (Builders), Ltd. (523789.) Regd. September 19. Nom. cap.: £2,000. Dir.: T. V. Denton, 125, Crosland-rd., Oakes, Huddersfield.

McLauchlan (Knottingley), Ltd. (523827.) Regd. September 21, The Grove, Jackson-la., Knottingley, bldrs., contractors and decorators, etc. Nom. cap.: £2,000. Dirs.: M. McLauchlan, Mrs. E. M. McLauchlan and G. A. McLauchlan, all of Glebe House, Glebe-la., Knottingley.

Stoneycroft Concrete Products, Ltd. (523842.) Regd. September 22, 29, Tynwald Hill, Green-la., Liverpool 13, mnfrs. of building materials, etc. Nom. cap.: £1,000. Dir.: J. Albert, 17B, Brompton-ave., Liverpool 17.

Reg. Hill (Plumbers), Ltd. (523785.) Regd. September 19, 104, Pembroke-rd., Cardiff. Nom. cap.: £2,000 in £1 shares. Dirs.: R. G. Hill and Mrs. R. O. Hill, 104, Pembroke-rd., Cardiff.

M. S. Rose (Heating), Ltd. (523867.) Regd. September 23, 88, High-st., Guildford, sanitary and heating engr. Nom. cap.: £200. Dir.: M. S. Rose, 10, Punchbowl-la., Dorking, Surrey.

Thomas Dorsett, Ltd. (523875.) Regd. September 23, bldr. and contractor. Nom. cap.: £4,000. Dirs.: T. Dorsett and Mrs. L. Dorsett, 52, Highfield-rd. North, Pelsall, nr. Walsall, Staffs.

W. W. Jessop & Son, Ltd. (523879.) Regd. September 23, 51, Club-st., Kettering, painters, decorators, paperhangers, carpenters, glaziers, joiners, etc. Nom. cap.: £2,000. Subs.: P. W. Jessop and Mrs. E. D. Jessop, 119, King-st., Kettering.

A. J. Man, Ltd. (523886.) Regd. September 24, 36, Grove-rd., Eastbourne. bldrs. and genl. contractors, etc. Nom. cap.: £100. Dirs.: A. J. H. Man and Mrs. C. A. Man, 10, Manvers-rd., Eastbourne.

Kelmack (Civil Engineering), Ltd. (523919.) Regd. September 24. Nom. cap.: £3,000. Dir.: D. F. Kelly, 12, Ramsdell, Stevenage, Herts.

Cammidge Road Constructions, Ltd. (523928.) Regd. September 25, 81, Belgrave-rd., Coventry, road and highway contractor. Nom. cap.: £10,000. Dirs.: G. Cammidge and Kathleen B. Cammidge, 81, Belgrave-rd., Coventry.

Dredging Contracting and Supply Unit, Ltd. (523938.) Regd. September 25, Copthall House, Copthall-ave., EC2. Nom. cap.: £100. Dirs.: A. V. Cole, Fen, Elmstead, Essex.

Fasweld, Ltd. (523945.) Regd. September 25, designers and mnfrs. of "Perspex," metal, wood and plastic articles and goods, etc. Nom. cap.: £300. Sub.: C. D. Vowles, 16, Soho-sq., W1.

Nevastane Products (Hornsey), Ltd. (523956.) Regd. September 25, cooking, heating and ventilating and genl. engrs., etc. Nom. cap.: £100. Dir.: J. E. Benham, Eastwick Hse., Gt. Bookham.

San-Mul, Ltd. (523958.) Regd. September 25, 41, Grainger-st., Newcastle-on-Tyne, mnfrs. of paints, varnishes, enamels, colours, dyes, etc. Nom. cap.: £1,000. Dir.: F. Swainston, 13, Hiddleston-ave., Newcastle-on-Tyne 7.

Secondite Co., Ltd. (523960.) Regd. September 25, 25, Millbank, SW1, to mnfr., prepare and adapt substances suitable for precasting, pressing; moulding and turning for use in connection with bldg., constructional and other work, etc. Nom. cap.: £100. Sub.: A. W. Iran, 4, Oak-rd., Caterham, Surrey.

Viroy Builders, Ltd. (523967.) Regd. September 25, 23, Clieveden-rd., Thorpe Bay, Essex. Nom. cap.: £100. Dirs.: C. A. Pool and Mrs. V. H. Pool, 75, Lambourne-rd., Barking.

H. Wood (Harrow), Ltd. (523976.) Regd. September 25, bldrs., etc. Nom. cap.: £2,000. Dirs.: H. Wood and Margaret Wood, 11, Hughenden-ave., Kenton, Harrow.

Monkman (Cambridge), Ltd. (523980.) Regd. September 25, 30a, Halifax-rd., Cambridge, bldg. and genl. contractors, etc. Nom. cap.: £2,000. Dir.: T. W. Monkman, 2, Thornton-rd., Girton, Cambs.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

OCTOBER 22.

***Bristol City C.**—Alterations and additions to public abbatoir at Gordon-rd., Whitehall. Dep. £2 2s.

†Southampton CBC.—Harefield Junior and Infants' Sch. Boro' A., Civic Centre. Dep. £1. Tenders by November 16.

†Surrey CC.—Adaptation and extension to Reigate Fire Brigade HQ. County A, Kingston-on-Thames.

OCTOBER 23.

†Sevenoaks RDC.—88 dwellings in three groups at London-rd., Westerham. Council's E&S. Dep. £2 2s.

OCTOBER 24.

†Brentford and Chiswick BC.—Approved list of contractors for building contracts. TC.

†Essex CC.—Stifford Clays County Infants' Sch. County A.

***Ware UDC.**—Booster station, together with ancillary site and other works at Watton-rd. E&S, The Priory. Dep. £3 3s.

OCTOBER 26.

†Birmingham City C.—68 maisonettes, Great Lister-st./Little Francis-st. City E&S. Dep. £2 2s.

***†Chislehurst and Sidcup UDC.**—Six houses and 12 flats, Wyncham-ave., Sidcup. T. W. Fagg, C. Dep. £2 2s.

***†Deptford MBC.**—14 shops, 14 maisonettes, 30 flats in Evelyn-st. H. V. Ashley and Winton Newman, architects, 3, Verulam-bldgs., Gray's Inn, WC1. Dep. £2 2s. Tenders by November 25.

OCTOBER 27.

***†Northants CC.**—Plant and handling equipment, Corby proposed junior school. County A, Northampton.

OCTOBER 28.

***†Norfolk EC.**—Two laboratories (prefabricated construction) at North Walsham Girls' High Sch. F. Lincoln Ralphs, Chief Ed. Officer, Stracey-rd., Norwich.

***†Northampton CB.**—Erection of first phase of Technical High School. H. A. Skerrett, Chief Ed. Officer, Ed. Office, "Springfield," Cliftonville, Northampton.

OCTOBER 29.

Gipping RDC.—Four bungalows at Gt. Blakenham. E&S. Dep. £3.

OCTOBER 30.

***†Canterbury TC.**—Erection of Sec. Mod. Sch. at London-rd. L. Hugh Wilson, City A. Dep. £2 2s.

***Durham County Police Authy.**—(a) One detached house with office at Shiney-row; (b) five pairs semi-detached houses and one detached house at Owton Manor estate; (c) one detached house with office at Bishopton. G. Clayton, FRIBA, Court-la., Durham.

***†East Sussex CC.**—Housecraft room at East Grinstead Cty. Gram. Sch. County A, County Hall, Lewes. Tenders by November 30.

***Sunderland BC.**—Provision of changing rooms at Barley Mow Park. Boro' A. Dep. £2 2s.

***Walthamstow BC.**—Conversion of "Wimmera Lodge," Salisbury-rd., into 4 flats. Boro' A. S&E. Dep. £2 2s.

OCTOBER 31.

***†Bournemouth CB.**—Two primary schools, West Howe. BA. Dep. £5 5s. Tenders by December 16.

***Cambridge City.**—School, Arbury-rd. estate. City S Dep. £2 2s.

***†Chester-le-Street RDC.**—Erection of three-storey flats at Elisabethville housing estate, Birtley. F. Bowman (A), Estate Office, Great North-rd., Birtley.

Llandilo (Carmar) RDC.—Six houses at Bethlehem: six at Crugybar; four at Llanwrda. E&S. Dep. £2 2s. each site.

***†Oldbury BC.**—183 dwellings, Titford estate. TC. Dep. £4 4s.

NOVEMBER 2.

***†Billericay UDC.**—Three shops, five flats and one maisonette at Appletree-way, Wickford estate. S., Council Offices. Dep. £2 2s.

***Great Yarmouth TC.**—23 flats and 12 maisonettes at Magdalen College estate; six flats and six maisonettes at St. Nicholas-rd. site and 12 flats and eight maisonettes at Ordnance-rd. BE&A, 8a, Queen-st.

Isle of Wight RDC.—Three old people's bungalows at Middleton, Freshwater. E. L. Smith & Son, architects, Melville-chbrs., Sandown. Dep. £2 2s.

Northleach RDC.—20 houses at Bibury. C, Council Offices, Northleach, Glos. Dep. £2 2s.

Norwich City C.—30 flats at Dereham-rd./Jex-rd City A.

Skipton UDC.—24 bungalows at Horse-cl. estate. F&S. Dep. £2 2s.

***†West Sussex CC.**—Biology laboratory extension at County Mixed Sec. Sch., Lancing (Job. No. 3687). County A, County Hall, Chichester.

***†West Sussex CC.**—(1) 3 F. E. Sec. Gram. Sch. at Ifield Campus site, Crawley (Job. No. 3458); (2) 4 F. E. Sec. Mod. Sch. at Ifield Campus site (Job No. 3459). County A, County Hall, Chichester.

NOVEMBER 3.

***Aldridge UDC.**—Mortuary, Anchor-rd. E&S. Dep. £2 2s.

***Bletchley UDC.**—100 houses at Castles estate. E&S. Dep. £5 5s.

NOVEMBER 5.

Northwich RDC.—24 houses at Hartford, contracts 11A (14 houses) and 11B (10 houses). E&S.

NOVEMBER 6.

Huddersfield CBC.—Trades for 14 flats at Brockenhall estate. Boro' A. Dep. £2 2s.

***Malvern UDC.**—Two bus shelters at Belle Vue Island. C. C. Judson, S & Water E, Council House. Dep. £2 2s.

NOVEMBER 7.

***Hornchurch UDC.**—Block of 12 flats at Abbs Cross-la. S, Council Offices. Dep. £2 2s.

NOVEMBER 9.

St. Faith's and Aylsham RDC.—16 dwellings in two parishes. F. M. Dewing, architect, 40, Prince of Wales-rd., Norwich. Dep. £1 1s.

***Wilts Standing Joint Committee.**—Erection of Divisional Police Headquarters, Salisbury. F. I. Bowden (A), County A, County Hall, Trowbridge. Dep. £2 2s.

NOVEMBER 10.

South Shields TC.—Seven houses at Simonside estate, section 5. BE. Dep. £2 2s.

NOVEMBER 11.

***Derby CB.**—(1) 14 houses and 2 flats, Mayfield-rd., Chaddesden; (2) 10 houses, Windy Ridge site; (3) 60 houses, Chaddesden Hall site; (4) 20 houses, Roosevelt-ave., Chaddesden; (5) 4 houses, St. Andrew's View, Roe Farm; (6) block of 4 shops and 8 flats, Roosevelt-ave.; (7) block of 4 shops and 8 flats, Cheyenne-gdns., Chaddesden. Boro' A, Council House. Dep. £2 2s.

NOVEMBER 12.

***Hants CC.**—Foundations, heating chamber and site works at Havant Barncroft Farm proposed infants' school. County A, Winchester. Dep. £2 2s.

***Lindsey CC.**—Infants' school at Grange-la., Scunthorpe. County A, Lincoln.

NOVEMBER 27.

Saltash BC.—Erection of eight flats on the Gwenfell-ave. extension housing site. A. de Barr, BS, Church House, Saltash. Dep. £2 2s.

NO DATE.

***Castle Donington RDC.**—One house at Moira Dale. McCarthy Collings & Co., 187, Forest-rd., Coalville. Dep. £2 2s.

***Ongar RDC.**—10 aged persons' bungalows at Shelley. E&S. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

OCTOBER 28.

Lancashire CC.—County S, County Hall, Preston. (Materials.)

ROADS, SEWERAGE AND WATER WORKS

OCTOBER 28.

Chester RDC.—New sewer from Weston-gr. housing site to Upton Park, Upton-by-Chester. Williams and Clarke, civil engineers, 5 and 6, Godstall-chbrs., Chester. Dep. £5 5s.

OCTOBER 30.

Farnham UDC.—Completion of site works on the Heath End housing estate extension. N. D. Youldon, AMICE, Acting E&S, Council Offices Annexe, South-st., Farnham. Dep. £2 2s.

***Wokingham TC.**—Road and drainage works at Norreys Barn. E. G. V. Hives (L), 3, Cork-st., Reading. Dep. £2 2s.

OCTOBER 31.

Amersham RDC.—Construction of new roads at the Glebe housing estate, Chalfont St. Peter. E&S. Dep. £3 3s.

†LCC.—Execution of general works and repairs. Chief Engineer, County Hall, Westminster Bridge, SE1.

NOVEMBER 2.

Saddleworth UDC.—Road surface works on Spring Wood estate, Delph, nr. Oldham. Howard & Benson, chartered architects, 88, Mosley-st., Manchester, 2. Dep. £2 2s.

Wem UDC.—Approximately 1,400 lin. yds. sewers, etc. G. B. Kershaw and Kaufman, engineers, 1, Victoria-st., Westminster, SW1. Dep. £5 5s.

NOVEMBER 3.

Epping RDC.—Roads and sewers at Parndon housing site. E&S. Dep. £2 2s.

Wiltshire CC.—Resurfacing of approx. 2 miles of the Devizes-Salisbury road, Route A.360, in the Tilshead and Shrewton areas together with the provision of a concrete haunch. County S, County Hall, Trowbridge. Dep. £2.

Worksop RDC.—Pumping station and r.c. water tower at Blyth. Silcock and Simpson, engineers, 10, Park-row, Leeds, 1. Dep. £5.

NOVEMBER 4.

Sherborne RDC.—Relaying of water mains at Leigh. Aubrey J. Allen, FRICS, consultant engineer, Half Moon-st., Sherborne, Dorset. Dep. £3 3s.

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NOVEMBER 6.

Heston and Isleworth BC.—Relief surface water sewers at Great West Road, Brentford. BE&S, 88, Lampton-rd., Hounslow. Dep. £3 3s.

Malvern UDC.—Street works at Alexandra-rd. S&WE. Dep. £2 2s.

NOVEMBER 9.

Bolton CBC.—Street and sewage works in Tonge district. BE&S.

Bourne UDC.—3,200 yds. water main to Dyke. Pick, Everard, Keay and Gimson, engineers, 6, Millstone-la., Leicester. Dep. £1 1s.

Oxford TC.—Roads and sewers on the Minchery Farm housing estate. City E, Town Hall. Dep. £2.

NOVEMBER 10.

Mid- and South-East Cheshire Water Board.—Laying and jointing of 9-in. dia. spun-iron pipes. Contract No. 15. Mr. Delwyn G. Davies, Engineer and Manager to the Board, Weaverham Grange, Hartford, nr. Northwich. Dep. £2 2s.

NOVEMBER 11.

Stoke-on-Trent TC.—Bucknall to Adderley Green sewers. City E&S, Town Hall, Stoke-on-Trent. Dep. £5.

NOVEMBER 30.

Lancs and Cheshire CCs.—First phase of new bridge across the River Mersey from Runcorn to Widnes. Mott, Hay and Anderson, engineers, 9, Iddesleigh House, Caxton-st., SW1. Dep. £10.

GENERAL BUILDING WORK

(LONDON)

Croydon.—EXTENSIONS.—Extensions to shop, offices, covered yard and warehouse at 115, London-rd. are to be carried out by South Suburban Co-Op. Society, Ltd., 99, London-rd., Croydon.

Croydon.—HOUSES.—New British Garden Estates, Ltd., Crossways, Addington, propose to erect houses at Addington Village-rd.

Croydon.—FACTORY EXTENSION.—Permission has been granted to Bowaters Fibre Containers, Ltd., Queensway, Waddon, to erect a factory extension on their premises. Plans have been prepared by Mr. Graham Crump, FRIBA, 43, George-st., Croydon.

Croydon.—HOUSES.—Wates, Ltd., 1258-1260, London-rd., Norbury, have received permission to erect six houses at 33-38, Featherbed-la.

Croydon.—HOUSES.—The Haling Down Estate, Ltd., c/o 49b, Woodcote-rd., Wallington, propose to erect four houses and three garages at Edghill-rd.; three houses and garages at Kingsdown-ave., and five houses and four garages at corner of Kingsdown-ave. and Mount Park-ave.

Croydon.—HOUSES.—Bell and Pearson, Ltd., 212b, Selhurst-rd., South Norwood, SE25, have applied for permission to erect 12 houses at Sandpits-rd.

Croydon.—HOUSES.—Planning permission has been granted to J. G. Cronk (Streatham), Ltd., 407a, Brighton-rd., South Croydon, for erection of eight houses and garages at 14-28, Worcester-cl.; six houses and garages at Wickham-rd. (adjoining Devonshire-ct.) and five houses at Christchurch-rd. (rear of 814, Brighton-rd.). Messrs. Cronk have prepared their own plans and will carry out the schemes themselves.

Croydon.—HOUSES.—BC propose to erect 126 houses on sites off Headley-dr., Thursley-cres., and Frimley-cl. Plans by Boro' A.

Croydon.—HOUSES.—BC propose to erect 150 houses at Dunley-dr., Pirbright-cres., Claygate-cres. and Merrow-way. Plans by Boro' A.

Friern Barnet.—AGED PERSONS' DWELLINGS.—Mr. K. R. Smith, ARIBA, 10, Bayley-st., WC1, has been invited by the council to prepare a fresh scheme for aged persons' dwellings on land at Russell-rd. and Russell-la.

Hendon.—FLATS.—Boro' E. has prepared a revised layout plan for 36 flats proposed to be erected on site No. 38 at Hendon Park-row.

Rainham.—OFFICES.—The New Process Breeze Slab and Mortar Co., Ltd., propose erection of an office block including a store and lavatory accommodation on the Industrial Estate, New-rd., A13.

Walthamstow.—FLATS.—Boro' A has prepared scheme for 24 flats to be erected in two blocks on each side of Clock House.

Walthamstow.—FLATS.—Boro' A. has been instructed to prepare a scheme of flats to be erected on a site at corner of Hale End-rd. and Forest-rd.

(PROVINCIAL)

Barrowford.—UDC received approval for further 18 houses.

Belper.—RDC propose erection of following houses in next programme:—Dethick, Lea and Holloway, 16; Duffield, 40; Kirk Langley, 12; South Wingfield, 30; Turnditch, 6; Weston Underwood, 4; and Holbrook, 10. S. J. Laycock.

Berwick.—TC approved layout plans by BS, J. Armitage, for 42 houses at West Field, 14 houses at Forge Cottages, Spittal, and seven bungalows at Tower-rd.

Bingham (Notts).—RDC propose negotiation of contract for further 45 houses at Bingham.

Blackburn.—EC propose new sec. sch. at Witton Park, £140,260 est.; and St. Joseph's RC jun. sch., Shadsworth estate, £51,392, est. in 1954/5 programme.

Brierley Hill.—TC propose immediate commencement of following houses:—Swan-la. scheme "K" 20 houses, Market-st. scheme "MM" 10 houses, and Harrison-rd. scheme "A" 20 houses.

Brighton.—EC to adapt Warren Farm Buildings, for St. John the Baptist (RC) sec. mod. sch., £11,115 (est.).

Bury.—TC preparing preliminary plans for further 100 houses at Redvales.

Chapel-en-le-Frith.—Derbyshire EC propose new day sch. for sub-normal children in Sandiacre area in 1954/5 programme.

Chester.—RDC approved layout for 34 houses at Huntington and 18 houses and four garages at Stoak.

Coventry.—Veasey & Sharples, Ltd., Stoney Stanton-rd., propose factory at Broad-la., Tile Hill neighbourhood unit.

Doncaster.—BC approved revised plan and estimate of £43,000 for pig market at Dookin Hill.

Durham.—RDC approved plans by Cty. A, Court-la., for proposed long-stay home at North Bowburn and two standard police houses and office at North Bowburn.—RDC seek loan sanction for £93,062 for erection of 82 houses.

Hexham.—Tenders to be invited for 25 houses at Newbrough, for RDC. Architects, W. Dixon & Son, 1, Collingwood-st., Newcastle-on-Tyne.

Hoole.—Congregational Church propose new buildings at Hoole-rd., £10/15,000 est. Rev. T. Leslie Haywood, 75, Hoole-rd.

Jarrow-on-Tyne.—Plans for aged people's hostel in Leam-la. and police house in Belsfield-gdns., for Durham CC.—Licence amounting to £140,000 issued to Mercantile Dry Dock Co., Ltd., for new deep-water berth.

Jarrow.—TC approved development scheme for the borough, to include the substitution of new shopping centres. Plans by BE, H. W. T. Perkins.

Keighley.—BC approved erection of six shops with living accommodation at Bracken Bank estate.

Keighley.—Direct Woollen Supply, Ltd., Leeds, purchased premises of G. Foster, Ltd., Cooke-la., for alterations and adaptations to form modern store.

Littleborough.—UDC propose further 174 houses on Stansfield Farm site.

Matlock.—UDC propose 50 "Unity" type and 50 "Airey" type houses on third section of Hurst Farm estate.—Approved plans for classroom accommodation at Matlock Bank CoE sch., for Derbyshire CC.

Newcastle-on-Tyne.—Marshall & Tweedy, 36, Blackett-st., prepared plans for six houses at Slingsby-gdns., for J. T. Bell & Sons, builders.—City C to erect ambulance depot in Millers-rd. to plans by City A.—Plans approved for old people's home at Kenton-la., for City C (architects, Tasker & Child, 25, New Bridge-st., Newcastle).

Nottingham.—TC approved scheme for additional cooling hall at public abattoir, £22,500 est.—EC approved erection of classroom, science laboratory and classrooms at Padstow sec. sch., Bestwood. £11,584 est.

Nottingham.—City C loan approval given for 16 houses and 18 flats on Sneinton Elements clearance area, to be renamed Chedworth estate (£74,176).—Loan sanction sought for 40 flats and 35 garages on Aspley estate. (Total, £52,216.)

Otley.—UDC approved amended layout for proposed housing site at Milner Bank. A private firm to be engaged for quantities.

Prudhoe-on-Tyne.—UDC to begin work next year on erection of nine houses at Mickley.

Rowley Regis.—TC approved plans for Parochial Church Hall adjacent to church schs., for Parochial Church Council.

Salford.—TC seek approval of final plans for new crematorium at Agecroft Cemetery, £30,000 est.

Seaham.—UDC urged to spend further £43,600 on sea-wall at present under construction by R. Robinson & Co., 41, Parliament-st., London, W1, to plans by Lewis & Duvivier, 44, Grosvenor-gdns., London, SW1.

Sheffield.—TC to lease site at Manor Lower shopping centre, Prince of Wales-rd., to Arthur Davy & Sons, Ltd., for erection of combined shop and house premises.—Site at Stevenson-rd. to John M. Moorwood, Ltd., for erection of offices, warehouse and foundry.—Site at Boston-st., to J. Gray & Son, for erection of factory.

Shilbottle.—Northern (N & C) Coal Brd., Newcastle-on-Tyne, to erect pithead baths at Shilbottle Colliery. Brd's A Dept., at Ashfield Towers, Gosforth.

Skelton.—UDC to erect 210 houses on site of 21 acres and negotiations are in hand to acquire another 30 acres in same area for housing also. Plans by S.

Smethwick.—EC received approval for Stage II of Change Tech. Col., £130,000 est.—TC approved layout of 16 dwellings at Church-la. and 24 dwellings at West End-ave.

South Shields.—Eskimo Slippers, Ltd., approached TC regarding suitable sites in Commercial-rd. for proposed factory.

South Shields.—R. Collins, Russell-bldgs., King-st., architect for extension to warehouse and offices at Templetown, for Progressive Wholesale Co., Ltd. Plans by Page, Son & Hill, 75, King-st., for additions to girls' high sch. and internal alterations to Mowbray-rd. sch., for EC approved.

Stourbridge.—Lye Trading Co., Ltd., Pedmore-rd., Lye, propose new warehouse.

Stratford-on-Avon.—National Farmers' Union Mutual Insurance Society, Ltd., propose three shops, offices and flats at Greenhill-st. Architect, F. Yorke, Stratford.

Sunderland.—EC to build a sch. for 480 pupils at Grindon next year, est. cost of £75,504. Boro' A, C. Bishop, Grange House, Stockton-rd.

Tyldesley.—UDC propose improvements at Union-st. Baths.

Ulverston.—RDC received approval for 62 houses on Burlington site, Kirkby.

Upholland.—UDC received approval for 16 flats at Alma Hill.

Uttoxeter.—RDC to prepare plans for houses at Bramshall. Plans by S, H. W. Pughe.

Wakefield.—West Riding CC propose home for babies in grounds of Sandal Hall.

Warton.—Air Min. propose 300 married quarters on existing playing field.

Wellingborough.—Sudborough & Wood, Ltd., propose new shoe factory at Henshaw-rd., £24,000 est.

Whitchurch.—RDC preparing plans for erection of houses at Wytheford-rd., Shawbury.

"THE BUILDER" PRICES

STONEWARE DRAIN PIPES

Our attention has been drawn to an amendment in the prices of stoneware drain pipes dating from July 21 last and affecting the details contained in our first issues of August, September and October.

Whilst the prices for loads of 2 tons and over remain unaltered, the percentage addition for quantities in the two categories under 2 tons are increased by 10 per cent. on the basic list price.

LEAD PAINT PRODUCTS

Associated Lead Manufacturers, Ltd., have issued the following revised basis prices per ton as from 8 a.m., October 12:—

	£	s.	d.
Genuine English dry white lead ..	138	15	0
Genuine ground English white lead ..	160	0	0
Genuine English white lead paint (per gal.)	*2	18	0
Genuine refined English red lead ..	120	15	0
Genuine powdered English litharge ..	120	15	0
Genuine English flake and ground flake litharge	123	5	0
Genuine refined English orange lead ..	132	15	0
Genuine refined English red lead in oil	147	10	0
Genuine English red lead Pt. BS. 1011 Type 1 (1 gal. tins)	2	14	6
English red lead Pt. BS. 1011 Type 2 (1 gal. tins)	2	3	3

*No change.

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TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Aberdeenshire.—Reconstruction and extensions to the Rosemount jun. sec. sch. J. A. O. Allan, Ross & Allan (F), architects, Bon Accord-sq., Aberdeen. Excavation, drainage, concrete, brick, building and allied works, *Adam Birnie, Ltd., £32,851. Reinforced concrete and allied works, *William J. Anderson, Ltd., £5,124. Steel structural engineering and allied works, *George Bissit & Son, Ltd., £4,602. Asphalt and allied works, *F. MacNeil & Co., Ltd., Kirkintilloch, £806. Joinery, carpentry and allied works, *Clark and Donaldson, £11,925. Slating and roughcasting and allied works, *Gordon and Crawford, Ltd., £[illegible]. Steel windows, casements, lantern lights and allied

works, *Henry Hope & Son, Ltd., Smethwick, Birmingham, £2,906. Plaster, lathing, concrete and allied works, *James Scott & Sons (Aberdeen), Ltd., £3,168. Layout and allied works, *Aberdeenshire Direct Labour Department, £280. Terrazzo and allied works, Toffolo, Jackson & Co., Ltd., Glasgow, £1,144. Door ironmongery and furniture, *Parker, Winder and Achurch, Ltd., Birmingham, £1,176. Painting, decorating and allied works, *George Shand, Ltd., £2,750. Plumbing, sanitary engineering and allied works, *A. B. Robertson & Sons, Ltd., £9,398. Carpave and allied works, *William Tawse, Ltd., Rubislaw, £1,462. Glazing and allied works, *Hugh Dow, Ltd., £525. Electrical fittings, installation and allied works, *George Angus, Ltd., £8,180. Composite flooring and allied works, *The Neuchatel Asphalt Co., Ltd., Edinburgh, £1,352. Heating engineering and Primax hot water installation and allied works, *J. T. L. Parkinson, Ltd., £12,506. Cloakroom fittings and furniture, *Parker, Winder and Achurch, Ltd., Birmingham, £570. Wall railings, balustrades and allied works, *William J. Anderson, Ltd., £1,157. Locker desks, fittings and furnishings, also chairs, etc., *The Educational Supply Association, Ltd., Glasgow, £7,950 and £3,784. (Others of Aberdeen.)

Barrow-in-Furness.—20 flats at Newbarns (South) estate, for TC. BE&S: *Building Manager, Barrow-in-Furness Corporation, Salthouse-rd., Barrow-in-Furness, £20,412.

Birkenhead.—203 dwellings at Woodchurch estate, for CBC. T. A. Brittain, FRIBA, DipArch, Boro' A: *Lloyd & Cross, Ltd., 68, Argyle-st., Birkenhead, £258,000 (subject to Ministry approval).

Birkenhead.—Erection of Fender prim. sch., for EC: *Morrison & Sons, Ltd., Liverpool, £35,026.

Bootle.—Erection of houses at Netherton estate, for BC: *W. B. Clare, 70, Childwall Priory-rd., Liverpool 16 (30); *City Contractors, Ltd., 40, North Johnst., Liverpool (32).

Brighton.—Erection of new special sch. on the Home Farm site for Educationally Sub-Normal Children, for EC. *Jeffery & Sons (Hove), Ltd., £51,380.

Dorking.—Erection of the first batch of 160 houses at the Goodwyns Farm estate: *Leslie & Co., Ltd., £227,106 (after revision). Erection of 48 houses at the Longmeadow housing site: *Selleck Nicholls & Co., Ltd., £68,479.

Dumbarton.—Erection of 122 houses at a cost of £211,870 at the Sommerville housing estate. William Wilson (F), architect, Master of Works Offices, Municipal-bldgs., Dumbarton: *Blackburn (Dumbarton), Ltd., Dumbarton.

Dumbartonshire.—Plans prepared for alterations and additions for Bulls Metal and Marines, Ltd., at Bulldale-st., Yoker. Beveridge and Dallachy (A&A), architects, 248, West George-st., Glasgow: *Thomas Cooper & Co. (Builders), Ltd., Glasgow.

Durham.—Erection of 30 houses at Bearpark, for RDC. J. F. Willis, Hsg. A, Byland Lodge, Durham: *Direct Labour, £37,162.

East Ashford (Kent).—Erection of 10 bungalows and six houses at Wye, Kent. A. Hobbs, ARIBA, Council's A. K. A. Pilkington, Hsg. S: *J. J. Clayson & Son, Ltd., Lyminge, £28,169.

Folkestone.—Erection of 17 houses in Dover-st., for TC: *S. J. Clark (Folkestone), Ltd., £23,206.

Glasgow.—Plans prepared for new works for the Lyon Proofing Co., Ltd., Bishop Works Amulree-st. John Easton (F), architect, 248, West George-st., Glasgow: *James Dickie & Son, Ltd., Glasgow.

Glasgow.—Erection of the new Church of Scotland halls at the Toryglen housing estate. Gratton and MacLean (F), architects, Woodside-cres., Woodlands-rd., Glasgow. Excavation, brick, building, concrete and allied works, *James Laidlaw & Sons, Ltd., Rutherglen. Steel structural engineering and allied works, *Donald Clark & Sons, Ltd., Rutherglen. Plaster, lathing and allied works, *A. C. Whyte & Co., Ltd., Glasgow. Plumbing, sanitary engineering and allied works, *Robert S. Renfrew & Sons, Ltd., Glasgow. Prestressed concrete floors and roof and allied works, *The Costain Concrete Co., Ltd., Coltness, Newmains. Roof tiling and allied works, *A. C. Whyte & Co., Ltd., Glasgow. Heating engineering, insulation and allied works, *Richardson & Co., Ltd., Glasgow.

Ilkeston.—Houses for BC: *F. Sissons & Sons, Ltd., 32, Cromford-rd., Langley Mill, £40,882 (30); *Rice & Beck, Ltd., High-rd., Toton, Beeston, £27,669 (21).

Jarrow.—Construction of a new quay, for the Mercantile Dry Dock Co., Ltd.: *Peter Lind, Ltd., London.

Leamington Spa.—Erection of three-storey block of flats and shops at Whitnash estate, for BC: *A. R. Lane, Ltd., Trafalgar-st., Coventry.

Leeds.—Houses for TC:—452 "Airey" type at Tinshill-la., Area 2: *Wm. Airey & Son (Leeds), Ltd., Leeds, £604,659; 272 "Wates" type at Swarcliffe estate: *C. Calverley & Sons (Contractors), Ltd., Evington Valley-rd., Leicester, £352,835; 146 "Myton" type: *Myton, Ltd., Clough-rd., Hull; 16 houses at Intake-la. estate: *N. B. Bell & Co., Ltd., Frankland-ter., Leeds, £20,672.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended October 10:—

Electrical wiring services: Wm. Allan Smith & Co., Ltd., 47, Iona-st., Edinburgh, 6. *Runway construction*: W. & C. French, Ltd., 50, Epping New-rd., Buckhurst Hill, Essex. *Building work*: Stanley Hugh Leach, Ltd., 231, Yeading-la., Hayes, Middlesex; R. Corben & Son, Ltd., 5, Castle-st., Dover; F. Shepherd & Son, Ltd., Blue Bridge-la., York; Jaram & Son, 20a, Gladstone-st., Scarborough. *Construction of Vehicle Refuelling & Parking areas*: F. R. Hipperson & Son, Ltd., Invicta House, Wantz-rd., Dagenham, Essex. *General Maintenance Work*: Davidson & Co., Upper Kirkhill, Nigg, Aberdeen.

London (British Railways).—Contracts placed by the Eastern Region of British Railways:—

Reconstruction of structure of Coleridge-rd. Overbridge No. 5 between Attercliffe Junction and Broughton-la., Wellerman Bros., Ltd., Dun-st., Sheffield. Maintenance of permanent way in the Peterborough, district Tersons, Ltd., 4, Dollis Park, Finchley, London, N3. Reconstruction of superstructure of underline bridge No. 18 between Stainforth and Thorne South, Wellerman Bros, Ltd., Dunst., Sheffield.

¶London (MOW).—Contracts placed by MOW during week ended October 3:—

London: Bush House (NE Wing), Aldwych, WC2, war damage repairs and decorations, F. W. Barnard, Ltd., 1-2, Babmays-st., Jermyn-st., SW1. *Berkshire*: DWS, Hanslope Park, Hanslope, construction of water tower and pump room, The Vibrated Concrete Construction Co., Ltd., 2, Caxton-st., Westminster, SW1. *Cumberland*: Ministry of Agriculture & Fisheries, Merrythought House, Calthwaite, adaptations and additions to provide laboratory, John Kitchen, Esq., Lowther-ter., Penrith, Cumberland. *Gloucestershire*: Avonmouth, Bristol, construction of new ATE, Stone & Co. (Bristol), Ltd., Redland-rd., Bristol, 6.

Lancashire: Post Office, 23, St. George-st., Liverpool, re-building front wall and roof, E. G. Gibbs, Ltd., 35/37, Church-rd., Woolton, Liverpool. *Staffordshire*: BPO, Tontine-st., Hanley, Stoke-on-Trent, conversion to HPO, George A. Poole, Ltd., 37, Liverpool-rd., Newcastle, Staffs. *Surrey*: FVRDE, Chobham-la., Chertsey, external treatment to huts, Sykes & Son, Ltd., 8, Essex-st., Strand.

¶London (War Dept.).—Works contracts placed by WD during week ended October 3:—

Sussex: Building, Ringmer Building Works, Ltd., Ringmer. *Essex*: Building work, William Sindall, Ltd., Cambridge. *Middlesex*: Painting, C. & T. Painters, Ltd., Harlesden, NW10. *Kent*: Painting & decorating, Geo. Jones & Son (Contractors), Ltd., London, W8. *Merionethshire*: Electrical installation, B. French, Ltd., Kidderminster. *Leicestershire*: Railway track work, Bradshaw Bros. (Contractors), Ltd., Leicester.

Cumberland.—Building work, Brown, Fraser & Co., Ltd., Glasgow. *Armagh*: Reconstruction of sports ground, P. J. Walls & Bros., Ltd., Belfast. *Hampshire*: Miscellaneous, The South Hants Building Co., Ltd., Totton. *Wiltshire*: Building work, Sims, Yeates & Co., Ltd., Andover. *Dorsetshire*: Building work, Hawkins Bros. (Contractors), Ltd., Bournemouth. *Hampshire*: Demolition work, Charles Griffiths, Ltd., London. *Wiltshire*: Waterproofing of huts, Bitumen Industries, Ltd., Slough.

Luton.—12 dwellings (two contracts), for BC. BE: *H. D. Carter, Ltd., 3-5, Alexander-rd., London, N19, £13,618 (subject to MOW&LG approval).

Newbiggin.—Modernisation and conversion of 118 houses at Newbiggin, Northumberland, for the NCB. Architects, W. Dixon & Son, 1, Collingwood-st., Newcastle-on-Tyne: *Graham & Mansworth, Forest Hall, Newcastle-on-Tyne.

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Newcastle-on-Tyne.—Erection of a bus stn. at Jarrow, for the United Bus Co.: *Bewley & Scott, Dunston-on-Tyne, £6,000.

Newcastle-on-Tyne.—Erection of a vehicle shed for Lees Bakeries, Ltd., Coast-rd., Newcastle, to cost about £20,000. Architects, Cackett, Burns Dick & McKellar, 21, Ellison-pl., Newcastle: *W. W. Kelsey, Back Hanover-sq., Newcastle-on-Tyne.

Newcastle-on-Tyne.—81 houses on the Kenton North estate, for City C: *Cussins (Contractors), Ltd., The Drive, Gosforth, Newcastle.

Newcastle-on-Tyne.—Proposed prim. sch. at Stocksfield-ave., for EC. Architects, P. L. Browne, Son & Harding, Pearl-bldgs., Northumberland-st., Newcastle. Consulting engineers, R. W. Gregory & Partners, Pilgrim House, Newcastle-on-Tyne. Building work: *George Bainbridge, 205, Westgate-rd., Newcastle-on-Tyne, £129,657. Low-pressure hot-water heating and hot-water supply: *Cairns, Ltd., 23, Picton-pl., Newcastle, £7,722. Electric lighting and power: *Electra (Birmingham), Ltd., Ramshill-rd., Scarborough, £5,018.

Northumberland.—Extension to the child welfare centre at Prudhoe, for CC: *A. D. Bird, Scotswood-rd., Newcastle.

Nottingham.—Erection of Greenwood sec. boys' sch., for EC: *W. & J. Simons, Ltd., Gordon-rd., West Bridgford, £145,850.

Nottingham.—Erection of a first section of new inn at Wollaton Vale, for Mitchells & Butler, Ltd.: *H. Cox & Son, Fletcher-st., Heanor.

Nottingham.—Houses for TC:—16 and 36 flats at Chedworth estate: *Thos. Bow, 45, Lamartine-st., Nottingham, £71,626; 40 flats and 35 garages at Apsley estate: *Hutchinson & Rostance (Builders), Ltd., 2, Kings Meadow-rd., £39,446 and £5,469.

Orrell.—32 houses at Kitt Green site, for UDC: *James Gee, Ivy House, Pemberton, nr. Wigan, £42,091.

Oxford.—Work for City C. E. G. Chandler, ARIBA, AMTPI, City A and Planning Officer. First instalment of the college for further education: *Lavender, McMillan, Ltd., 54, Cheam Common-rd., Worcester Park, Surrey, £243,100. 36 flats, Rose Hill Frontage: *Benfield & Loxley (Oxford), Ltd., 106, Bullingdon-rd., Oxford, £60,890.

Ramsbottom.—Houses for UDC:—92 and 12 flats at Tagg Wood estate: *J. E. France, Peel-st., Newton Heath, Manchester; 25 houses and four flats at Pin Meadow: *A. Spencer, 31, Bold-st., Accrington.

Richmond (Yorks).—Erection of 228 "No Fines" houses at Colburn and Hipswell, for RDC: *G. Wimpey & Co., Ltd., Orchard House, Jesmond, Newcastle-on-Tyne, £320,519.

Scottish Special Housing Association, Ltd.—Contracts placed between August 20 and September 23:—

House Erection.

N.W. Larkfield, Greenock (100 Stuart) and Park Farm, Port Glasgow (102 Stuart), Stuart & Sons (Housing), Ltd., 7, Fitzroy-sq., Glasgow, All trades. Larkfield, Greenock (6 shops and 6 houses), SW Scotland Electricity Brd., Clyde Sub-Area, Glasgow, Electrical services. Catrine, Ayrshire (40 Trad.), SW Scotland Electricity Brd., Kilmarnock, Electrical services. Dalneigh, Inverness (126 Trad.), Alec Hall & Sons (Builders), Ltd., Aberdeen, Fix draught excluders. Lochore, Fife (2 Timber), John Reid & Sons, Crossgate, Fife, All trades. Park Farm, Port Glasgow (102 Stuart), Scottish Gas Brd., Greenock, Gas services.

Cadder-rd., Glasgow (16 Trad.), Claude Hamilton, Ltd., Glasgow, Electrical: G. & G. Rae, Ltd., Glasgow, Glazier; A. W. Thomson, Ltd., Bellshill, Plumber; Dougall & Co., Dumbarton, Carpenter and joiner; Dougall & Co., Dumbarton, Brick, etc.; Chas. Watson (Glasgow), Ltd., Glasgow, Tiles and roughcast; Chas. Watson (Glasgow), Ltd., Plaster; J. Grant & Sons (Decorators), Ltd., Glasgow, Painter. Stoneyburn, W. Lothian (8 Trad.), and Livingstone Stn., W. Lothian (4 Trad.), Northern Sports Ground Construction Co., Edinburgh, Fencing. Cadder-rd., Glasgow (288 No-Fines), Scottish Gas Brd., Glasgow, Gas services.

Mill-rd., Bothwell (20 Trad.), Robert Aitken & Sons, Ltd., Airdrie, Boundary fencing. Fleurs-pl., Forres (90 Dunedin), Val de Travers Asphalte Co., Glasgow, Floor finish. Lane Farm, Drongan (80 houses), SW Scotland Electricity Brd., Kilmarnock, Electricity services. Pinkie Braes, Musselburgh (116 Dunedin), Crudens, Ltd., Musselburgh, All trades.

Eredine, Argyllshire (6 Hall), Allt-ne-Blathaich, Argyllshire (4 Hall), Kilmahumaig, Argyllshire (4 Hall), Asknish, Argyllshire (10 Hall), Minard, Argyllshire (8 Hall), Kilmichael, Glassary, Argyllshire (20 Hall), Strathlachlan, Argyllshire (2 Hall), Auchlecks, Perthshire (6 Hall), and Glentrool, Kirkcudbrightshire (40 Hall), Alec. Hall & Son (Builders), Ltd., Aberdeen, All trades.

Valley-gdns., Kirkcaldy (26 Trad.) and (128 Trad.), Chas. Wilson (Glasgow), Ltd., Glasgow, Plaster. Mains of Fintry, Dundee (122 No-Fines), A. W. Mitchell & Sons, Kirriemuir, Plumber. Springhill, Ayrshire (30 Stuart) and Beith, Ayrshire (44 Stuart), Stuart & Sons (Housing), Ltd., Glasgow, All trades. Mains of Fintry, Dundee (122 No-Fines), J. Kilpatrick & Son, Ltd., Edinburgh, Electrical. West End, Fraserburgh (36 Granite Finish), F. Park, Victoria-st., Fraserburgh, Painter. Hilton-rd., Alloa (6 Trad.), Pine Rock Asphalte Co., Bridgend, Floor finish. Mains of Fintry, Dundee (112 Space Saving), Scottish Gas Brd., Dundee, Gas services.

Hilton-rd., Alloa (6 garages), SE Scotland Electricity Brd., Stirling, Electricity supply. Sighthill, Edinburgh

(3 flats), Marley Tile Co., Bishopbriggs, Floor finish. Cadder-rd., Glasgow (various), Barnet & Morton, Ltd., Kirkcaldy, Chain link fence to retaining wall. Beith-rd., Johnstone (66 Stuart), Stuart & Sons (Housing), Ltd., Glasgow, All trades. Mastrick, Aberdeen (100 No-Fines), Jas. Miller & Partners, Edinburgh, All trades. Maxwood-rd., Galston (12 Timber), J. Alexander & Sons, Ltd. Galston, Relaying footpaths. Douglas, Lanarkshire (64 Timber), J. Logan & Son, 13, Lanark-rd., Carluke, Relaying footpaths. Fauldhouse, West Lothian (98 Timber), Jamieson & Bryson, Main-st., Midcalder, Renewal of soil and waste pipes, 37, Manor-pl., Edinburgh, T. & J. W. Neilson, Ltd., Edinburgh, Supplying and fitting fireplaces; Scottish Gas Brd., Edinburgh, Enlargement of gas service pipe; John Hadden & Son, Edinburgh, Supplying and installing gas points and supplying gas fittings.

Sheffield.—Alterations and adaptations of office accommodation at the Town Hall: *Direct Labour, £6,934. Reinstatement of Manor Community Centre: *Green Bros. (Dore), Ltd., £15,486 (revised tender). Construction of 50 houses at Greenhill/Bradway estate, for TC: *M. J. Gleeson (Contractors), Ltd., Sheffield, £64,854.

Shipley.—202 houses and flats at Coach-rd., Baildon, for UDC: ‡Direct Labour.

South Bank-on-Tees.—Alterations to factory BT. 28/4, for North-Eastern Trading Estates, Ltd. Architects, Matkin & Hawkins, Barclays Bank-chbrs., Fawcett-st., Sunderland: *D. Theaker, Staithes, Yorks.

South Shields.—Alterations and additions to Derby-st. baths, for TC. BE, John Reid: *R. S. Johnson & Sons, Ltd., Frederick-st., South Shields, £8,550.

South Shields.—Factory alterations on the Bede trading estate, for D. W. B. Cakes, Ltd. Architects, Cackett, Burns Dick & MacKellar, 21, Ellison-pl., Newcastle-on-Tyne: *R. Jordan, Queen Alexandra-rd., North Shields.

Stoke-on-Trent.—Erection of 98 houses at Longton-rd., Bucknall, for TC: *J. Kelly, Corporation-st., £139,814; 28 at Windermere-st., Cobridge: *J. W. Walton, High-st., Sandyford, £44,182; 18 at Bentilee Farm estate: *Langley Bros., 43, Werrington-rd., Bucknall, £25,788; 90 houses at Bentilee Farm estate: *Direct Labour, £137,979; 22 houses at Bentilee estate: *Naylor & Nutt, Coronation-st., Tunstall, £36,150; 24 police houses at Sneyd Green: *W. Leake & Co., Ltd., £34,405.

Sunderland.—Extension to heavy machine shop at William Doxford & Sons' shipyard: *Brims & Co., Pandon-bldgs., City-rd., Newcastle-on-Tyne.

Wallsend.—Parsons & Marine Engineering Research and Development Assoc. Wallsend, is to construct a new administrative block to include a canteen, drawing office and part of the research dept. and the expansion of workshop facilities: *Cubbits & Co., Ltd., London.

Walthamstow.—Nine flats at Millfield-ave./North Countess-rd., for BC: *Direct labour, £14,790.

West Bromwich.—Adaptation of Shenstone Lodge, for BC: *T. Richards (Chasetown), Ltd., 54, High-st., Chasetown, West Bromwich, £13,312.

Worksop.—Eight houses at Cuckney, for RDC: *G. W. Stainforth, Mosborough, £11,950.

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